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LECTURES
ON THE
THEORY AND PRACTICE OF MEDICINE;
NOW IN COURSE OF DELIVERY AT THE THEATRE OF ANATOMY AND MEDICINE, WEBB-STREET, SOUTHWARK.
BY
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&c., &c.

Spasmodic torticollis; sketch by Sir C. Bell. The fifth pair of nerves. PREFACE.—*The reviews. Prochaska's observations not an anticipation. Origin of the discovery of the excito-motory theory. Refutation of envious and interested detractors. Object of experiments misrepresented. Conclusion.*

GENTLEMEN:—I conclude my observations upon diseases of the Nervous System, by briefly noticing

SPASMODIC TORTICOLLIS.

1163. This spasmodic affection of the sterno-cleido-mastoid muscle has long been known to physicians. It is obviously of the same character as the spasmodic strabismus, and spasmodic tic—an affection of the *true spinal motor* nerves.

The following interesting case was communicated to Sir Charles Bell by Dr. Knight:—

"Sir,—About December, 1827, Master —— was seized during the night with a stiff neck; it excited little attention; he played with his schoolfellows as usual, some of whom playfully but rather rudely twisted his head in contrary directions. When he returned home at the Christmas holidays I was requested to see him. I found his general health very much deranged, and his sterno-cleido-mastoideus muscle on the right side rigidly contracted; leeches and fomentations were applied to the mastoid extremity of the muscle; alterative medicines were prescribed; strict attention was paid to the bowels; and after some weeks his general health very much improved; still the muscle remained as rigid as ever. During the summer his father took him to London, and you were consulted. I believe he was advised to go to the sea, and a steel apparatus was recommended. The sea, I understood, was of service to him, but as the apparatus did not improve, and injured his back, it was, after some weeks trial, laid aside. A vigorous system of shampooing was then adopted, together with very active exercises. His health improved; he grew taller and stouter; and by great effort he could stand straight; but the moment he relaxed his efforts, his chin turned towards his shoulder, his spine became curved, and he relieved himself by resting on one leg.

"All remedial measures were at length abandoned, and this last half-year he was sent to school. His general health has continued good, but his sterno-cleido-mastoideus is just as it was."

Sometimes the head is drawn to the shoulder; sometimes it is moved to and from one side, with a rocking motion.

The hydrocyanic acid, taken internally and applied externally, seems to promise much benefit. What would be the comparative results of dividing the spinal accessory or the muscle itself.

1164. The following sketch is taken from Sir Charles Bell:—

"The condition of this woman is very peculiar: in her, common breathing inspiration is performed with a sudden spasmodic action; but she is also affected at intervals with more violent spasms, and her respiration is then hurried and distressing. On the commencement of a paroxysm, she bends her body slightly forwards, and thus prepares herself, as it were, for the attack; her nostrils are dilated widely, the angles of her mouth are dragged forcibly downwards, there is a constriction of the throat, and the shoulder and chest rise convulsively, as when a person has cold water poured upon the head; the inspirations are deep and violent, and are attended with a sniffing of the nostrils, the air being inhaled through them only, and not through the mouth. The fibres of the platysma myoides start into view, and there is quick rising and falling of the pomum Adami; the sterno-cleido-mastoi-

deus and trapezius, on both sides, act powerfully, fixing the head and elevating the shoulders.

1165. "The spasmodic action of these muscles exists to a considerable degree constantly, yet it increases in paroxysms which last so severely for a few minutes that she is deprived of the power of speech, and seems to be almost suffocated. These paroxysms recur at irregular intervals. It was observed by the attendants, that when she was excited by walking about the ward or by replying to our questions, they returned more frequently.

1166. "She could move her head with perfect freedom when we requested her, but still the spasmodic action continued. She also raised either shoulder, or twisted her face to one side, when she was desired. This woman continued under the care of the physician for about a month, and was discharged cured."

1167. I have recently attended a patient, a young gentleman aged about twenty, who experiences attacks of a peculiar affection of the movements of *respiration*; he lost the power of articulation; on attempting to speak he was suddenly seized with a spasmodic action of the diaphragm, which induced a sudden *inspiration*, with a hissing noise as the air entered through the lips, and pain in the points of attachment in the diaphragm. This affection yielded to attention to diet, and to the state of the bowels.

1168. These and other affections of the true spinal *motor* nerves agree in several particulars:—1, they are usually suspended during sleep (in this they differ from *similar* affections *excited* through the true spinal *excitor* nerves, which frequently come on during sleep); 2, they are redoubled by any cause of mental hurry or excitement.

1169. Notwithstanding what has been said, I consider it still a question important to determine whether any and which of these diseases have their origin in the excitor nerves, or in the true spinal axis?

I will conclude these observations by a few words relative to the pathology of

The Fifth Pair.

1170. Sig. Bellingeri considers the *fifth* to be a nerve of organic life, as well as of sensibility. M. Magendie speaks of it as influencing the nutrition and functions of the eye, &c. M. Serres views it as the nerve of instinct. Sir Charles Bell as a mere sensitive nerve. The view given of the subject in these notes is very different and far more comprehensive. I consider the fifth, in addition to its office as a cerebral nerve, or nerve of sensation, as forming a part of the excito-motory, and of the external ganglionic *systems*.

1171. But, besides these views of the function of the fifth pair, M. Magendie has discovered another. This nerve has a peculiar influence over the *senses*, as M. Magendie observes, in his "Precis de Physiologie," ed. 3, tom. i., p. 100.

1172. The same observations are made in reference to the sense of smell and of hearing.

These experiments are not the only evidence we possess of the *influence* of the fifth on the *vision*. In the "Archives Générales," tom. xxiii., p. 260, there is a case of *amaurosis* of the left eye arising, apparently, from caries, and the presence of a portion of a toothpick of wood in the first molar tooth of the left side, and ceasing nine days after its extraction.

1173. In an interesting case under my own care, a partial *amaurosis* of the right eye has arisen, apparently from caries of the upper canine tooth of the right side; it was augmented by unsuccessful attempts at extraction; it has not ceased, however, since the extraction was effected.

1174. These facts, with the similar results from wounds or tumours of the supra-orbitar branch of the fifth, appear to me to confirm the extraordinary experiments of M. Magendie.

1175. The effects of the division of the pneumogastric on the lungs and the stomach, as demonstrated by the experiments of Dr. W. Philip and Sir Benjamin Brodie, prove this to be a secretory nerve. There are no cases on record, I believe, with the exception of a very defective one by M. Gendrin, in which the pneumogastric was distinctly affected, and in which the influence of its disorganisation upon the lungs, stomach, and other internal organs was traced.

1176. There is still an interesting inquiry open to us relative to the defective development and nutrition of the internal organs and external limbs, &c., from diseases of the internal and external ganglionic systems.

1177. Some diseases are obviously affections of the internal ganglionic nerves; we have *augmented action*, for instance, of the liver and kidney, in the cholera Europæa, and enuresis; we have *paralysis* of the same organs in the cholera Indica, and in some cases of icterus, and in ischuria.

1178. I here close, then, my observations upon the Nervous System and its Diseases for the present. If they have interested and instructed you, if they have led you to reflect upon these interesting maladies, my object will have been accomplished.

I shall be still more gratified if you are induced to bear the subject in your minds, and assist me by your observations.

The subject is but *sketched*. Perhaps it can scarcely be said even to be sketched. It is full of promise in reference to anatomy, physiology, and practice.

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1. Having at length, Gentlemen, brought to a conclusion my observations on the nervous system and its diseases, so far as my

present space will allow, I have now to make a few remarks, relative to the place which my investigations ought to occupy in the history of physiology.

2. If I advert to this subject once more, it is because an elaborate attempt has been made to deprive me of the credit due to originality in my investigations,—how vainly you will soon perceive.

3. I will not inflict upon you a refutation of these articles seriatim, which, so far as I am concerned, it would be most easy to write. I will make such observations only as are necessary to elucidate the question before us. In one journal there are two articles, *both* in opposition to me, which *actually contradict each other*. One of these articles deems my observations of sufficient importance to be claimed for Haller, Whytt, &c. &c. The other views them as so novel and dangerous as to require that the student should be warned against them! Dr. Paris observes, in his "Life of Sir Humphry Davy,"—"If a discovery be made, its truth and importance are *first* questioned; and should these be established, *then* its originality becomes a question of dispute." It was left for the writers in that Journal to endeavour to accomplish *both* of these objects *at once!* Never did such a glaring instance of inconsistency disgrace medical literature. I corresponded with the editors upon the subject. Did they, in consequence, make an honourable "amende?" No. The self-contradiction, without correction, without apology, remains,—remains sanctioned by their names! And these gentlemen speak of vindicating the *honour* of our profession! Let them first wash their hands of a publication, of which *part might*, but of which *all could not*, be true, or just, or honourable.

4. You may, perhaps, be amused by comparing and contrasting a paragraph or two:—

"These are phenomena to which Dr. M. Hall has given the rather uncouth name of 'excito-motory,' and which he states as the effects of the 'reflex function of the spinal chord;' a power neglected or misunderstood, as he thinks, *by former physiologists*, &c.

"It cannot be necessary to remind our readers of the great class of movements," &c.

"Dr. M. Hall cannot be ignorant of the statements and reasonings by which Dr. Whytt," &c.

"The only truly original observations which we have noticed in the work of Dr. Hall," &c.

"We cannot admit that we owe to him the knowledge of this principle," &c.

Here the thing is *good* but *old!*

"*We* protest (!) in the strongest manner against the introduction into this work (On the Nervous System, by F. Le Gros Clark), of certain physiological views, which are anything but well established" (!) by Dr. Marshall Hall. "Mr. Clark is almost the *only* anatomical writer who appears to have received these ingenious views without some distrust of their correctness," "unconfirmed as they are by *any other physiological authority*." (!)

"Instead of rendering the knowledge of the nervous system more intelligible to the student, it will rather tend to confound and perplex him." (!)

Here it is *new*, but *good for nothing!!*

5. There is no *consistency* in those statements, *except* that of their opposition to *me*.

Let me repeat, from § 289, what has been done by my own investigations. I have shown you, then,—

I. That the vis nervosa of Haller obeys other and different *laws* from those laid down by that eminent physiologist, and by Professor Müller.

II. That this same power is the active but *unsuspected* agent in the experiments of Redi, Whytt, Legallois, Mr. Mayo, &c.

III. That this same power has a most extensive but *unsuspected* application to *Physiology*, *Pathology*, and *Therapeutics*; and

IV. That it reposes in a special and *unsuspected Anatomy*, consisting of

1. *The True Spinal Marrow*, with
2. *Incident*, *Excitor*, and
3. *Reflex*, *Motor Nerves*.

V. These constitute the *True Spinal Excito-Motory System*, the importance and extent of which no one yet knows. *These constitute my discovery.*

More or *less* than these I do not claim.

6. Now, nothing which the Reviewer adduces interferes with that statement. I freely grant him all he would take; and still I assert that the statement to which I have alluded is true in all its parts.

7. But in another number of the same publication there is another (yea, and another! yea, and another!) article against me! The first is headed—

"*Complete Anticipation of Dr. Marshall Hall's Doctrine of the 'Reflex Function,' by Prochaska.*"

8. A very youthful critic observes upon this author,—"I know not whether I have been more surprised at *the accuracy of his views*, or the fact of their having been *so long overlooked*."

9. Whether Prochaska's observations be a "complete anticipation" of my doctrines, and whether his views be of such surprising "accuracy," you will soon see and judge for yourselves. But before I proceed to lay these observations and views before you, I will *explain* the fact of their "having been so long overlooked." The truth is, that until the development of that "harmo-

nious combination of these doctrines into a uniform system, and the application of it to the explanation of many phenomena which were not formerly regarded as explicable on such principles, in which," according to one of my reviewers, my "great merit consists" (and in this sentiment I am myself disposed partly to concur), neither this youth, nor any one else, had *eyes* to *see* the full value of these things. I will lay before him another extract from the work already quoted of Dr. Paris: *he* is young, and though pert, *may be* ingenuous:—

10. "Evidence may be often strained from the writings of philosophers in support of prior claims to late discoveries; but upon a candid review, these loose statements, or obscure hints, will generally be found wholly destitute of the pretensions which an unfair spirit of rivalry has too often laboured to support. Many of such hints, indeed, so far from advancing the progress of truth, *had never even attracted notice, until* AFTER *the discoveries to which they have been supposed to relate.*" (!)

11. I will now inform you that for *four* years, viz., from 1832 to 1836, those views (and nothing more than the term *reflex*) whose value he estimates so justly, but which he would so unjustly assign to Prochaska, and some other ancient writers, were treated with neglect, nay, with ridicule. No one thought them worth claiming for himself or for others. It is only within the last *two* years, when the value of my researches could not longer be concealed, that they have obtained notice, and, at the same time, been claimed by some for themselves, and by some, for others.

12. But I proceed to lay before you this extract itself:—

"CHAPTER IV.

"*Functions of the Sensorium Commune.*

"§ 1. What are the Sensorium Commune, its functions, and its seat?

"1. External impressions which are made upon the sensorial nerves are propagated very rapidly through their whole length to their origin, where, when they have arrived, they are reflected according to a certain law, and pass into certain responding motor nerves, through which they are again propagated to muscles, and excite certain and determinate motions. This place, in which, as in a centre, the nerves appropriated to sense as well as motion, meet and communicate, and in which the impressions of the sensorial nerves are reflected upon the motor nerves, is called the Sensorium Commune,—a term already received by most physiologists.

"2. It is not *one place* in which celebrated men have placed the seat of the sensorium commune. Bontekoe, Lancisi, de la Peyronie, have placed the sensorium commune the corpus callosum. Willis places the perception of the senses and the origin of motion in the corpora striata. Descartes attributed the function of the sensorium commune to the pineal gland; Vieussens to the centrum ovale; Boerhaave considered that collection of points as the sensorium commune, in which all the sensorial nerves terminate, and from which all the motor nerves arise, and places it in the medulla (fornicata), surrounding the cavity of the ventricles; in a later work, however, he placed it in the confines of the medullary with the cortical substance, which opinion the illustrious Tissot regards as the most probable, and proved by the observations of Wepfer; Mayer seems to place the sensorium commune in the medulla oblongata, and of this opinion is Metzger; Camper says,—'If the sensorium commune has any locality it is in the pineal gland, the nates, and the testes, and that the opinion of Descartes is not a foolish one.'

"The *whole cerebrum* and *cerebellum* certainly do not seem to belong to the sensorium commune. (!) These parts of the nervous system appear to be rather the instruments which the soul uses immediately in the performance of the actions termed animal; but it seems not improbable that the sensorium commune, properly so called, *extends* to the medulla oblongata, the *crura cerebri*, and *cerebelli*, (!) to part of the *thalami* optici, (!!) and the whole spinal marrow; in a word, to the origin of the nerves. That the sensorium commune extends to the spinal marrow, we learn from the motions which remain in decapitated animals, which could not take place without the consent and co-operation of nerves arising from the spinal marrow; for if a decapitated frog be pricked, not only is the punctured part retracted, but it crawls and leaps, which could not be without the consent of the sensorial and motor nerves, of which consent the seat must be in the spinal marrow, a part of the sensorium commune remaining.

"3. The reflexion of sensorial into motory impressions, which takes place in the sensorium commune, does not obey mere physical laws, where the angle of reflexion is equal to the angle of incidence, and where action and reaction are equal; but peculiar laws written, as it were, by nature, in the medullary pulp of the sensorium, which we can only know by the effects, and not discover by our imagination; but a general law, according to which the sensorium commune reflects sensorial impressions, is our preservation; so that certain external impressions, hurtful to the body, are followed by certain motory impressions, producing motions tending to remove the source of injury; and, on the contrary, external or sensorial impressions, beneficial to us, are followed by internal or motor impressions, producing motions calculated to perpetuate that benefit. Many examples certainly

prove this general law of reflexions of the sensorium commune, of which it will be sufficient to adduce a few.

"Irritation of the internal membrane of the nostrils excites sneezing, because that irritation made upon the *olfactory* nerves is carried to the sensorium commune, is there reflected, according to a certain law, upon motor nerves going to the muscles appropriated to respiration, and, through these, produces a forcible expiration, by which the irritation is removed. In the same manner, when any irritation is caused to the larynx by a crumb of bread or a drop of liquid, this irritation, carried to the sensorium commune, and thence reflected upon the nerves appropriated to respiratory motion, excites a forcible cough, the most apt remedy for expelling the irritant, which does not cease until that irritant is removed. If a person approaches our eye with his finger, although we are persuaded that no harm will be done to us, yet that impression carried by the *optic* nerve to the sensorium commune, is so reflected, in the sensorium, upon the nerves appropriated to the motion of the eyelids, that we involuntarily close the palpebræ, so as to avoid the contact of the finger. (!) These, and innumerable other examples that might be adduced, show manifestly how much the reflexion of sensorial into motor impressions by the sensorium commune regards the preservation of our body. On this account Tissot properly enumerates the action of the sensorium commune amongst those powers which constitute the nature of our living body.

"4. As, therefore, the principal function of the sensorium commune consists in the reflexion of sensorial into motor impressions, it is to be observed that this reflexion takes place whether the mind be conscious or unconscious of it. The motion of the heart, (!) of the stomach, (!!) and of the intestines, (!!!) certainly in no respect depend on the consciousness of the mind; but as no muscular motion can be excited unless a stimulus applied to the sensorial nerves passes by a certain reflexion to the motor nerves, and excites contraction of the muscles, so it is certain that the reflexion of impressions proper for inducing these motions, if they take place in the sensorium commune, take place without the consciousness of the mind. But it is asked whether these impressions ascend to the sensorium commune, to be reflected, or whether, without making this circuit, they are reflected by the ganglia, whence these parts have many nerves. More on this point hereafter. But that the reflexions of sensorial into motor impressions take place in the sensorium commune, we learn from certain actions in apoplectic patients, in whom all consciousness is destroyed; for they have a strong pulse, (!) breathe, and even raise the hand to the part affected (!!) unconsciously. The sensorium commune acts also without consciousness in producing the convulsive motions of epileptic patients, and even those motions which are observed in profound sleep, besides motion of the heart and respiration, viz., of the limbs when slightly punctured, or pricked, or pinched. To these we must add all those motions which remain in the body of a decapitated man, or other animal, and are excited by pinching the body, but especially the spinal marrow, which certainly occur without consciousness, and from the residual part of the sensorium commune, which is in the spinal marrow. All these actions arise from the organisation and physical laws proper to the sensorium commune, and are, therefore, spontaneous and automatic. Those actions which take place in the animal body with consciousness are such, that the soul has no power over the will, or such as the soul can coerce or impede at will. The former, as they are ruled by the sensorium commune, as far as it does not depend upon the mind, also not less than those which are performed unconsciously, are automatic. Such are sneezing from a stimulus applied to the nostrils; cough from a stimulus applied to the trachea; vomiting from irritation of the fauces, or from an emetic; tremor and convulsions in chorea, S. viti, and in the paroxysms of intermittent fever, &c. But the actions which the soul directs and moderates by its power, although the sensorium commune has its part in producing them, we call, nevertheless, animal, not automatic. Of these we shall treat in the next chapter."

13. I have numbered the paragraphs for the sake of easy reference.

You will soon discover that it is no "anticipation" of my peculiar views whatever, and far, very far, from being of extraordinary "accuracy."

14. First for par. 1. This is certainly a step beyond Whytt; but is it a "complete anticipation" of *my* DEMONSTRATION, and of the *true spinal* SYSTEM? (See particularly these lectures, § 52, &c. &c.) Green-eyed, indeed, must that person be who will affirm this. But—

15. Now for par. 2. What do you think of this as a "complete anticipation" of my discovery of

1. *A distinct and true spinal marrow, the exclusive centre of*
2. *A system of incident, excitor, and of reflex, motor nerves, and the exclusive seat of*
3. *The excito-motory power, exclusive of the cerebrum, cerebellum, and cerebral nerves?*

What do you think of the surprising "accuracy" of these views?

16. And now for par. 3 and 4. *I* have strenuously endeavoured to show the distinction between

1. *The cerebral*,
2. *The true spinal*, and
3. *The ganglionic systems.* See § 4, 24, 83, &c.

Here all are confounded. The raising of the hand of an apoplectic patient to his head; winking on the *approach* of the finger to the eye; the action of the heart, stomach, and intestines; and, in another place, the growth and nutrition of the fœtus, are all enumerated pell-mell with actions which really belong to the true spinal system. The questions I would ask are these:—Where is the "complete anticipation" of my discovery of *the excito-motory system, the exclusive system of*—

1. *The orifices, the sphincters*;
2. *The ingestors, the expulsors*; and, in a word, of
3. *All ingestion and egestion* in the animal frame, and economy?

Where is the "anticipation" of this SYSTEM? Where is the "accuracy" of these views?

17. I would ask further—Where is the "complete anticipation" of my discovery of *the system of the* WHOLE CLASS *of spasmodic diseases*:

1. *Centric*;
2. *Centipetal*; and
3. *Centrifugal?* (See § 966.)

Other questions crowd upon me. Where is the demonstration that the power in all this combined system is the *vis nervosa* of Haller, acting in modes and directions never suspected before by any writer, and at direct variance with the most explicit statements of that eminent physiologist and Professor Müller. (See § 27.) I put this question in the face of the feeblest of all feeble attempts to deprive me of the merit of having first proved this fact and law, made by my reviewer.

18. What shall I say of my remarks respecting the action of *remedies*, the condition of the *larynx* in different spasmodic diseases, the condition of the *muscles* in paralysis, &c. &c.? Where—where is the "complete anticipation" of all this?

19. You cannot imagine, Gentlemen, how sickening this altercation is to me. But Harvey and Haller, and even Jenner, experienced similar treatment, and, if possible, worse. It is my duty to state the truth, and from this duty I shall not shrink. I am sorry for the gentlemen who have put forth this "complete anticipation," these "accurate views," but I affirm that I grant them willingly all that the paragraph contains, without feeling that I have sustained the loss of one jot or one tittle of what I have claimed for myself. Again I refer you particularly to § 6 of this preface, or § 289 of these lectures.

20. I have now the painful duty of stating that a writer in another Journal has even insinuated that I had read this paragraph in Prochaska, and that I had taken the work out of the library of the Medico-Chirurgical Society, of course for this purpose! Now, I can affirm that I never saw Prochaska's volume in my life, until *years* after I had published my "Memoir on the Reflex Function of the Medulla Oblongata and Medulla Spinalis," in 1833. The author of the statement in question might, if truth and justice were his objects, have readily assured himself of this fact, so far as the copy belonging to the Medico-Chirurgical Society is concerned, in *the same manner* in which he ascertained that I had used that copy at all. There are not, I should think, many other copies of Prochaska in London, and, at any rate, I defy friend or foe to prove that I ever saw one. When I did consult Prochaska it was to read the passages quoted from him by Sir Charles Bell, in preparing the first edition of these lectures, published in April, 1836. And that it was so, and that I had no wish to conceal Prochaska's name, is proved by the facts of my having mentioned it *twice*, and copied *two* drawings from his work upon those points, in *one and the self-same page* of this Journal. (See § 22—24.)

21. But I will give this base insinuation in the very words of the writer; they are as follows:—"There is a copy of Prochaska's work in the library of the Medical and Chirurgical Society, and little as the volume was known to others, one member, at least, has shown that he duly appreciated its value, by the fact of his having repeatedly taken it out: that member, need we add, is—Dr. Marshall Hall!"

22. I have done what the author of this calumny ought to have done before he indulged himself in an unfounded insinuation, viz., corresponded with the librarian of the said Society; and I present you with a copy of the correspondence:—

"Dear Sir,—Will you do me the favour (though I fear I am giving you much trouble) to inform me on what occasions I have had Prochaska's works from the Medico-Chirurgical Society's library?

"As your note is for the purpose of publication, I will thank you to let it be very short, but *full* and *explicit*. I am, dear Sir, yours very truly,

"MARSHALL HALL.

"14, Manchester-square, April 13, 1838.

"To Mr. Williams, Librarian, Medico-Chirurgical Society."

"Royal Medical and Chirurgical Society,
"April 14, 1838.

"Sir,—In reply to your inquiries, I beg leave to inform you that you have taken from the library Prochaska's works on the following dates: December 30, 1835; January 30, 1837; January 20, 1838. I have the honour to be, Sir, your obedient servant,

"THOS. WILLIAMS, Assistant Librarian.

"To Dr. Marshall Hall."

23. Now, my *first* paper "On a Particular Function of the Nervous System," was read to the Zoological Society on the 27th of November, 1832; and my "Memoir on the Reflex Function of the Medulla Oblongata and Medulla Spinalis," was read to the Royal Society on June 20th, 1833; the former upwards of THREE YEARS, the latter TWO YEARS AND A HALF before the FIRST of the dates on which I consulted Prochaska.

24. If I *had* seen the passage which is so "complete" an anticipation of my doctrines, and so "accurate" in its views, which I never did, it is more than probable that I might have passed it over, or, at least, have classed it with the vague statements of Whytt and *his* "partizans." For, in fact, it is little better than vague, except in the single word "reflectuation," a term which I have almost exchanged for the term excito-motory; see the *title* of my last Memoir.

25. But what is more important is, that I can fortunately *prove* that the process by which I arrived at the discovery of the *True Spinal System*, was different from that insinuated above, and independent of Prochaska, or of any one.

26. My friend Mr. Henry Smith, of Torrington-square, was present when the phenomenon which suggested this system to me was first observed *incidentally*, and during nine-tenths of the whole series of my experiments.

27. The fact to which I have alluded, was the movement of the separated tail of the salamander, on the application of the point of a needle. Similar phenomena were then observed in other parts of the same animal, the head being first removed, and the trunk then divided. After irritating various parts of the *skin*, the next step was to irritate the *mucous surfaces*, and then to pursue the subject in all its extensive relations to anatomy, physiology, pathology, and therapeutics.

28. I have stated that the fact first observed, was observed incidentally. It was observed in the course of my researches on the circulation of the blood, during which I was constantly joined and assisted by Mr. Smith, as my dedication to my work upon that subject expresses.

29. Mr. Smith can bear testimony, not only to these facts, but to the whole process of reasoning and experiment to which it led. The *whole* was a pure discovery, or series of discoveries, on my part. When I afterwards learnt what Redi, and Whytt, and Legallois, and Mr. Mayo had done, I adopted it at once as theirs, as I now do the statements of Prochaska, so far as they are in accordance with truth.

30. I have thus proved,—

1. That I never saw Prochaska's work until three years after my first paper was published.

2. That if I had, it does not contain the *principle* or the *theory* of the true spinal system.

3. That my views were formed entirely from an independent observation and a subsequent series of experiments.

31. And once more I repeat that I claim nothing which is to be found even in Prochaska. Again I request you to read § 289, or § 6 of this preface, and to compare it with the extract from that author. Not ONE of the points of my recapitulation is to be found in this "complete anticipation" of my doctrines!

32. I am sorry that I must now add that I consider the account of my young critic as being unfair. If you have time and inclination, read and compare carefully his recapitulation with the references which he gives you, on the one hand, and with mine, on the other, and judge for yourselves. I have only space for an example or two: first, the assertion "*exclusively of the cerebrum and cerebellum*," is not correct; for the crura of both, and part of the thalami are *included*; secondly, the phrase "*vis nervosa of Haller*," is incorrect, for it is not the vis nervosa *of Haller*, as I have understood and used it, which is meant, for this does not regulate formation and nutrition in the fœtus; thirdly, the phrase "*the Class of spasmodic diseases*," is incorrect, for such a collective phrase has not been used by any one, I believe, but myself; &c. &c. This youth would have done better and more wisely, as well as justly, to have kept *within* the bounds of truth, instead of passing them. How will *you*, who have *heard*, and *seen* the *development* of the True Spinal and Excito-motory System, in all its length and breadth, smile when you observe that he writes *thus* of the paragraphs from Prochaska and the other worthies:—"The *principle* itself, the *seat* of its action, and the *theory* having been developed!" &c. Whether my labours be original or not, I can assure this critic that *his* are not. Every piece of scientific biography presents examples of envious detraction. The unfortunate and amiable Lavoisier was not spared: "ou déterrait," says the eloquent Cuvier, "pour le chagriner, tous les vieux livres, ou pouvaient se trouver quelques idées analogues aux siennes."—(Eloges, 1827.)

34. You might think, Gentlemen, that I have now surely done, but it is not so. With the gentlemen already noticed, I *must* class an *assassin writer* in an "evening paper." I copy the following paragraph from the "Times:"—

"Dr. Marshall Hall has within the last few days performed a series of experiments on a turtle which had unfortunately fallen into his power, with the view of demonstrating to his class the nature of the nervous influence. When experiments are made with the view of illustrating a disputed point which has a direct bearing on any subject connected with the science of medicine, however much we deplore the neces-

sity of such proceedings, we cannot condemn the operator; but surely those experiments ought not to be made merely to gratify idle curiosity."—*Evening Paper.*

34. This paragraph had reference to the experiments published in THE LANCET, vol. I. p. 166. The reply was obvious. It occupied a prominent situation in the first page of the "Times" a few days afterwards:—

"EXPERIMENTS UPON A HEADLESS TURTLE.

"*To the Editor of the Times.*

"Sir,—I have just seen in your paper of this morning a paragraph extracted from an evening paper which, if the insinuation it contains were true, would be, and very justly, injurious to me. The evening paper forgot a material point. *Before the turtle came into my possession it was* HEADLESS—*had ceased to be a sentient being!*

"One of my objects in these researches is the very opposite to the ignorant and unjust insinuation of the evening paper. I have observed,—'It may be satisfactory to the humane to know that the motions of the eel, for example, after the head is removed, are not motions arising from *sensibility*, but from another principle, as distinct from feeling as the irritability of the mere muscular fibre. This fact will suggest the means as well as the propriety of avoiding such monstrous cruelty as that of skinning eels alive. This will be effectually done by first removing the *head* however the animal may afterwards move on the application of stimuli, and *appear to feel*.'—(Memoirs, p. 38.)

"I trust the editor of the evening paper will, when he sees these lines, have both head and heart enough to correct the impression his paragraph must have made upon his readers. I am, Sir, your obedient servant,

"MARSHALL HALL."

35. The whole conspiracy presents a deplorable view of the jealousy and malignity which prevail amongst the soi-disant guardians of the honour of our profession! I do not believe that the history *even of physiology*, to which I now add a melancholy page, exhibits such a disgraceful picture.

36. Finally, what shall I say of the *host* arrayed against me at this moment? Merely that I *know* what breasts feel the bitterness of disappointed malignity, and what breast feels the glow of conscious truth, justice, integrity, and honour, yea, and of a true though abused benevolence.

37. Much has been said respecting the terms used in a recent controversy. My opponents forget that all improper phraseology employed by me consisted of *quotations* from their protégée. For instance, "decided misrepresentations," "suppression of facts," "statements not in strict accordance with facts," are always disclaimed, being carefully marked with inverted commas.

38. Much also has been said respecting the introduction of what have been termed "*private* matters" into this controversy. I beg leave to say that I have introduced no private matters. I assisted the party alluded to to the very uttermost, when a total stranger, upon a purely *public principle*, just as I would any other apparently deserving member of our profession; and upon a similar principle, and as a *public duty*, when he aspersed my character unjustly, I exposed his calumnies, his plagiarisms, and his ingratitude together. And, as I *never* had any feeling of *friendship* towards him, so now I have not the slightest feeling of *animosity*. It is *pity, not anger*, which I feel towards him, and all who can sanction such disgraceful conduct as his.

One journal states, another repeats, and the former eagerly and noisily re-echoes, charges against me, which are totally unfounded, whilst they have evaded the *real*, the *scientific* question, and the questions —Who is a *plagiarist*? and who is a *faithful historian*? (See § 13, 16, 503, &c.) Whether all this be worthy of our profession and our literature, I willingly leave to your judgment.

39. And wherefore all this opposition? One fact will explain the mystery. I have gladly availed myself, for the dissemination of these important views, of the widely-diffused circulation of THE LANCET!

40. I feel that I have done the science and the art of medicine some service by my last ten years' labours. I feel that my claims have been unjustly opposed by individuals at the Royal Society, and elsewhere; but to my brethren in the profession at large, I have to express my warmest thanks, for the *daily* testimony I receive of *their* estimation of the value of my investigations. With *their* countenance and assistance, I will pursue my useful labours, *regardless*, henceforth, of every obstacle which envy, hatred, and malice may invent and oppose.

TREATMENT OF BRONCHITIS.—Some time ago Dr. Williams published a paper in which the propriety of abstaining altogether from drink was inculcated as a mode of treatment of bronchitis. In a recent number of a French journal we read a letter from M. Piorry, in which that physician claims having produced the same idea more than six years ago in his lectures, and in the "Bulletin Clinique."

THE French and Belgian surgeons are disputing the honour of having invented the "immoveable apparatus" and the "starched bandages" for the treatment of fracture. But the same mode of treatment was communicated more than 50 years ago by a quack in London to a distinguished lithotomist of this country.

LECTURES
ON
MATERIA MEDICA AND THERAPEUTICS;
NOW IN COURSE OF DELIVERY
AT THE
WINDMILL STREET SCHOOL OF MEDICINE.
BY
GEORGE G. SIGMOND, M.D.

ALCOHOL.—ETHER.

ALCOHOL.—*Distillation of wine. Products of fermented fluids. Discovery of alcohol; its properties. Action of alcohol on vegetable matters. Variety of alcoholic fluids. Strength of wines. Action of alcohol on acids. Sulphuric ether. Oil of wine. Spirit of nitric ether. Administration of diffusible stimuli. Effects of wine and alcohol as stimuli.*

GENTLEMEN:—All vegetables, which contain the extractive matter in union with acid, are capable of being made to yield a vinous fluid, and as the principles which form the fruits are more generally blended together in better proportions for the purpose, these parts of plants have been, in various countries, employed to form some or other of the fermented liquors; as the grape, however, excels all others in the just proportion in which the tartarous acid, the sweet principle, the extract and water are combined together, it has been preferred, amongst all nations, as soon as agriculture has been at all understood.

The fruits of this country are, generally speaking, but little capable of being made into good wine; and we are always obliged to correct, by artificial means, the bad qualities that render the gooseberries, the currants, and other fruits, ill adapted for wine-making. The addition of sugar is always necessary, though there are some, who have paid attention to this subject, who think that our wines are spoiled by excess of sugar. Mr. Cobbett, who, in matters of domestic economy and in agriculture, was considered a very high authority, says,—"That which we call currant wine is neither more nor less than red-looking, weak rum, the strength coming from the sugar. People deceive themselves: the thing is called wine, but is rum; that is to say, an extract of sugar." It is much to be regretted that some scientific chemists do not enter upon this subject, for I am persuaded their labours would be most amply repaid. The domestic processes might be rendered so certain and so complete, upon philosophic principles, that a highly beneficial series of wines, made from fruits of British growth, might be obtained. Fabroni and Parmentier have shown to us, by first analysing a wine that was to be imitated, discovering the quantities of the several ingredients, and then forming a mixture from similar principles, that excellent wine may artificially be produced; in fact, possessing all the qualities which mark that formed from the natural juice of the grape. Dr. Maculloch has given some very good practical rules; but there is a vast field for inquiry.

When wine is distilled, it affords that liquid product which is familiar to us under the name of brandy. Arnaude de Villeneuve, a chemist who lived in the thirteenth century, was the discoverer of this most valuable and important product of the analysis of wine. It is a compound of alcohol, of water, and of a small proportion of oily and extractive matter, and from these we are able, by an artificial process, to separate alcohol, which is the remote product of the vinous fermentation, and which is properly defined as the purely spirituous part of liquors which have undergone the vinous fermentation, for it can be obtained from them all.

It is by the several proportions of this product that fermented fluids essentially differ from each other. The juice of the sugar-cane yields its rum; rice, its arrack; cherries, their kirschen wasser; malt, spirits; they all differ from each other in their taste, their odour, their smell, and their characteristic qualities; but the one great principle to which they owe their power of action is the same: it is this alcohol which is the result of the last analysis. This process is called *distillation*, by which we mean the separation of volatile liquids from their more fixed bodies with which they were previously in combination; when the volatile liquid thus obtained is again distilled, the spirit becomes more highly concentrated, and *rectification* is said to have taken place.

By a happy application of scientific principles, we are enabled to dispense with the tedious repetition of distillations which was formerly considered necessary, and, by a single operation, to obtain the alcohol in a high state of concentration. A French chemist, named Adam, has led the way to a series of improvements in the distillatory apparatus, and both in France and in this country great attention has been paid to this important subject, and various means have been adopted by which time, labour, fuel, and water for condensation, have been economised, and an alcohol, possessing superior qualities, has been obtained. Several patents have been granted in this country for most ingenious inventions:—Winter, Grimble, Evans, Frazier, Williams, have exercised much skill and cleverness upon this important subject.

Alcohol is a transparent, colourless, light liquid, of a lively, poignant, and agreeable odour, and its taste is hot, pungent, and highly stimulating; its volatility is so great that it is converted, even by the heat of the

hand, into vapour. Its power of intoxication is most remarkable, and various have been the theories which have, at different times, been advanced to explain the cause, but they are all considered unsatisfactory. The action upon the blood-vessels seem, however, to be the one most generally received; the determination of arterialised blood to the brain, which organ is thus supposed to be energetically stimulated, has been acknowledged to be the most probable cause. Alcohol boils at 174° of Fahrenheit. Dr. Hutton asserts it to be capable of being frozen; it buras with a light blue flame, when heated in contact with the atmospheric air; it mixes with water in every proportion, giving out heat, and the bulk of the two liquids thus united is less than when each is separate. The affinity between these two fluids is such, that water separates alcohol from a great number of substances with which it existed in previous combination, but the alcohol is easily taken from the water by distillation.

Upon vegetable matters, alcohol exerts a very marked action, and this depends upon the chemical principles which enter into the formation of each vegetable; the saccharine matter of the beet-root, of parsnips, and of a great number of fruits, may thus be obtained, whilst the volatile oils, camphor, the resins, and the balsams, unite very readily with it, and various pharmaceutical preparations, which I shall have occasion to speak to you of, are formed by this union. It has been always a great and important object to ascertain the purity of alcohol, and various have been the suggestions which have been made to give us a proof of this. The quickness with which it burns, without leaving a residue, and the ignition of gunpowder by dropping a small quantity of it on the powder, then setting fire to it, and observing if the first portion burn quietly and the last ignite the powder, which last part of the experiment would not occur if the spirit be watery, have been, amongst other trials, made, but they are not, by any means, satisfactory proof. The hydrometer, an instrument invented for ascertaining the specific gravities of different bodies, is, however, the only certain test, and the hydrometer of Fahrenheit may be employed for this. The strongest spirit which has yet been produced is of specific gravity, 0.796, at the temperature of 60°.

The alcohol of the Pharmacopœia is thus directed to be obtained:—Take of rectified spirit a gallon, chloride of calcium a pound; put the chloride of calcium into the spirit, and when it is dissolved, let seven pints and five ounces distil; and the process is thus explained by Mr. Phillips:—Chloride of calcium is a salt which has great affinity for water, and is soluble in spirit when the solution is subjected to distillation; the chloride remains in the retort with nearly the whole of the water. This is spirit of wine in its concentrated state. When diluted with a small proportion of water, it forms rectified spirit; when more largely diluted, proof spirit. The specific gravity of rectified spirit is 838; it is free from colour, and is not rendered turbid on the addition of water. In taste and smell it resembles wine. This spirit may be reduced to proof spirit, by adding to five pints of it three pints of distilled water, at the temperature of 62°. Spiritus tenuior, or proof spirit, is by the laws of the kingdom to be of a specific gravity of 920. The solutions of various substances in dilutions of alcohol, are called tinctures, spirits, or ethers; and alcohol is largely employed in pharmacy, for the purpose of making some of the most important of our preparations, and its solvent powers are of the utmost utility, from our being thus enabled to obtain the virtues of many substances which are completely incapable of being acted on by water.

There are a vast number of alcoholic liquids in use in different nations; they are, for the greater part, the result of careful distillation. Amongst the most important and the most generally known are eau de vie, from grapes; from cider and perry, cherries, corn, potatoes, and the residue of the brew-house; British brandy, or gin, from corn: this is so pure a spirit that it is not to be taken alone, it is, therefore, reduced and rectified, and turpentine, juniper berries, prunes, and nitre, are added to it; Portuguese brandy, from damaged figs and inferior raisins; Irish and Scotch whiskey, from corn, this is a pure spirit; peach brandy of the United States, from peaches; Swedish brandy, from corn and the black ant; Danish and Russian schnapps, from rye and barley; Geneva made in Holland, from corn flavoured with the juniper berry; aguardiente of Spain, from the grape; rum, from the sugar-cane; maraschino de zara, from the cherry; eau de vie de Dantzic, called also, from having gold leaf floating on its surface, gold-wasser, from corn and other ingredients; rosolio, a distillation from brandy, sugar, cinnamon, and cloves; Egyptian araki, from dates; mahayah, of Morocco, from figs; toddy, of Ceylon, from the cocoa tree; phacer, of Nepaul, from wheat or rice; y-wer-a, of the Sandwich Islands, a spirit not so strong as whiskey, from the tea-root; brandeywin, from the husks and stalks of the grape and wine lees of the Cape of Good Hope.

Various are the fermented liquors, too, obtained from different vegetables, and also from animal secretions in various parts of the globe, each nation apparently preferring its own. Thus in Brunswick mum is fermented from wheaten malt and oatmeal with fir rind, tops of fir and beech; in Norway birch wine is made of the juice of the birch tree; in Russia, quass from

barley malt, rye malt, oatmeal, fermented, and made acidulous; bruga, from oatmeal and hops; in Kamschatka a most singularly intoxicating liquor is fermented from a red mushroom of the country, and is called muchumor; the sherbet of Turkey is made of sugar, lemon juice, apricots, or plums, and flavoured with some sweet flower; in Tartary the koumiss is a great favourite, this is made from mare's milk fermented, and sometimes a drink called arika is distilled from it, and another is obtained from cow's milk; in China, mandrin is a superior rice wine, and its lees, distilled, yield a brandy called show-choo; they likewise have what is called lamb wine, which is made of lamb's flesh mashed with milk or rice, and fermented; in Java the kadek or broom, is of rice boiled and stewed with onions, black pepper, and capsicum; in the Friendly Isles the women chew a species of pepper plant, the saliva is collected, and after fermentation, diluted with water, and forms the kava; the pulque of Mexico is the juice of the agave fermented, and this is distilled also, and the aguardiente de magney is thus obtained. Of our own fermented liquors obtained from malt and hops, such as porter, beer, ale, I have had occasion to speak.

Of the alcoholic strength of wines and liquids Mr. Brande has made a very useful table, to which I must refer you, but you must remember that it can only be looked upon as an approximation to their mean alcoholic strength, for no wine will be of the same strength every year, so much must depend upon heat, light, and various circumstances which act upon the growth of the grape, and which must again most materially influence the fermentation. Some years are remarkable for the flavour and the bouquet of the wines, while others again are known for the greater or less strength of the product of the process of fermentation.

Upon a fair average it would appear that Port wine contains about twenty-three parts in a hundred of pure alcohol; Sherry, about twenty; Madeira, about twenty-four; Marsala, about twenty-five; Burgundy varies from twelve to fifteen; Claret, from twelve to sixteen; the wines of the Rhine, from eight to fourteen; Champagne contains about twelve; London small beer has about one per cent.; the porter, about four; and the brown stout, about six.

The action of alcohol upon acids is of a very singular character, a decomposition is effected, and various phenomena are the result, which differ according to the nature of the acid employed, as the one most employed in medicine. I will speak to you of that combination of the acid with alcohol which forms sulphuric ether, and to which I shall have occasion hereafter to revert. When sulphuric acid is poured upon alcohol it at first sinks down to the bottom, but upon agitation mixture ensues, heat being evolved, and the sound that accompanies effervescence is heard; this occurs from an immediate decomposition, during which a portion of the alcohol passes off in the form of vapour, having an agreeable aromatic odour; the mixture assumes a brown colour; if the retort in which such a mixture is made be placed upon a bath of heated sand, and two receivers adapted to it, the first immersed in a vessel cooled by ice or water, different results are successively obtained, an alcohol of an agreeable odour, then a fluid possessing a most pungent odour of extreme volatility and a pleasant taste, to which the name of ether has been given, after this sulphureous acid passes over and likewise a light yellowish oil which is called sweet oil of wine, or ethereal oil, a fluid somewhat resembling oil of lavender in appearance, having a very delightful aromatic odour, a sharp and bitter taste. When the distillation of this sweet oil is concluded, sulphureous acid, becoming thick and black, passes over, and at last pure sulphuric acid, accompanied by carbonated hydrogen and carbonic acid gases; this process is finished by the production, as the fire cools, of a residuum having the form and consistence of bitumen.

The sulphuric ether of our Pharmacopœia is thus to be formed:—Take of rectified spirit, three pounds; sulphuric acid, two pounds; carbonate of potash, previously ignited, an ounce. Pour two pounds of the spirit into a glass retort, add the acid to it, and mix, afterwards place it on sand and raise the heat so that the liquor may quickly boil and the ether pass into a receiving vessel, cooled with ice or water; let the liquor distil until some nearer portion begins to pass over; to the liquor which remains in the retort after the heat has subsided pour the remainder of the spirit that ether may distil in the same manner; mix the distilled liquors, then pour off the supernatant portion, and add to it the carbonate of potash, shaking them frequently during an hour; lastly, let the ether distil from a large retort, and be kept in a stopped vessel. The whole of the operation is one of the most singular which the science of chemistry offers to us from the different phenomena which present themselves; the nature of the reaction has been very much discussed, and as yet no entirely satisfactory conclusions have been drawn, although Fourcroy thought that he and Vauquelin had arrived at the true theory of etherification, and Macquer likewise attempted to explain it, as did Bucquet, acting upon the original views taken by Stahl and Boerhaave, who considered alcohol as a fluid composed of oil, of acid, and of water, that when sulphuric acid was mixed with it a sort of bituminous principle was produced, and that a kind of naphtha was the result. Dr. Kane supposes

ether to be a protoxide of ætherium, a compound of hydrogen and carbon. I must refer you to the notes of Mr. Phillips in the Pharmacopœia for further elucidation of this subject; he will explain to you the views on which it is grounded that ether is an oxide of ætherium, alcohol a hydrated oxide of ætherium, or a hydrate of ether, and sulphovinic acid a hydrated bisulphate of oxide of ætherium, or a hydrated bisulphate of ether; ether and its vapour are highly inflammable, and care should always be taken in every operation lest ignition should occur, and in the laboratory accidents have not been uncommon from the carelessness with which a lighted candle has been brought near to it.

The oleum ætherium, the ethereal oil, or oil of wine, is thus directed to be made:—Take of rectified spirit two pounds, sulphuric acid four pounds, solution of potash, distilled water, of each a fluid ounce, or as much as may be sufficient. Mix the acid cautiously with the spirit. Let the liquor distil until a black froth arises, then immediately remove the retort from the fire. Separate the lighter supernatant liquor from the heavier one, and expose the former to the air for a day; add to it the solution of potash, first mixed with water, and shake them together; lastly, when sufficiently washed, separate the ethereal oil, which subsides. Of this the compound spirit of sulphuric ether is formed. Take of sulphuric ether eight fluid ounces, rectified spirit sixteen fluid ounces, ethereal oil three fluid drachms.

The nitric acid acts in a much more rapid manner upon alcohol. Various have been the processes recommended by chemists; Navier, of Chalons, was the first who gave a useful and economical formula; Woulfe another, which, however, was very dear, and required much time to fix the apparatus, which was frequently broken with a loud explosion; and Fourcroy tells us that in five operations at which he assisted, the vessels twice flew in pieces, with a violent explosion. Boquer and Mitouard published methods of preparing nitric ether.

The spiritus ætheris nitrici is a mixture of hyponitrous ether and of alcohol; it is thus made:—Take of rectified spirit three pounds, nitric acid four ounces; add the acid gradually to the spirit, and mix; then let thirty-two fluid ounces distil. Its specific gravity is 831; it changes the colour of litmus slightly red; on the addition of carbonate of soda no bubbles of carbonic acid are produced. The specific gravity of sulphuric ether is 750°; what is sold fluctuates between 733° and 765°. It totally evaporates in the air. It reddens litmus slightly; it combines sparingly with water, for example, in the proportion of a fluid ounce to half a pint, and remains limpid.

Alcohol, and the preparations which contain it, are now to be considered by me in a medicinal point of view, for its various combinations have great and important actions upon the human economy. They are tonics, they are diffusible stimuli, they are antispasmodic, and are stomachic.

There are few subjects which demand greater practical knowledge than the proper administration of any of the diffusible stimuli during the progress of fever; the older physicians were reluctant to give wine, and though occasionally recommended, it was considered highly necessary to point out that nothing but the most urgent danger could justify its use. About the termination, however, of the last century, an individual of eccentric mind and manners, who had been the assistant of the illustrious nosologist, Cullen, in his valuable labours, produced a new doctrine, which, from his name Brown, was called the Brunonian system, and which, for a considerable length of time, swayed the practice of many most intelligent persons. His idea, that a vast proportion of the diseases to which the human frame is subject, are dependent upon debility, led to the employment of the diffusible stimuli in a vast number of diseases in which they had been previously considered inadmissible. After all, the theory of fever, as elucidated by one of the followers of Brown, the ingenious Dr. Darwin, was quite as good as the mechanic theory of Boerhaave, the spasm of extreme vessels of Hoffmann and of Cullen, and the putridity of Pringle; it is, however, somewhat difficult to be explained by any one but himself; he, however, recommends wine in fever, on the impression that as fever depends upon a want of sensorial power in the brain, that the secretion may be increased of that sensorial power by opium, or wine, because, as he observes, when taken in certain quantities, an immediate increase of strength and activity succeed for a time, with consequent debility, if the quantity taken be so great as to intoxicate. Certainly, during the development of those symptoms, which, from their intensity prognosticate death, and to which the name of typhoid is given, the internal use of wine, or of diluted spirit, may very properly be permitted; but nevertheless it must at all times be watched with due anxiety and attention, for the brain cannot bear the excitement produced; and the moment its action ceases the consequent reaction comes on, and, too frequently, with greatly increased energy, so that the powers of life are rapidly exhausted.

It is a very unfortunate mistake to imagine that, because the muscular energy is exhausted during a long continued fever, and that the debility is very great, that stimuli are required, and that wine and cordials must, therefore, freely be administered. In one of Mr. Lawrence's lectures you

will find an observation made by him, as to the consumption of wine in the Fever Hospital of the metropolis. He states that he had the curiosity to ask Dr. Tweedie how much port wine they used in the course of the year in the Fever Hospital, and they take a great many cases there in the state called typhus; they receive a great many cases in which that state exists in its worst form. Dr. Tweedie told him that the consumption of wine, he believed, did not exceed two or three dozen bottles per annum; so that their experience there has not led them to place great dependence on it. Patients and their friends are generally much too eager for the employment of wine, or of some of what they imagine to be cordials; they are not aware that in the state of debility a very small quantity becomes an inordinate dose; that the apparent exhaustion is more readily cured by natural sleep than by any of the active remedies. During the termination of fever, after the danger has ceased, the most favourable symptom is that sleep, during which the body acquires more strength and more nutrition than could be obtained by the most stimulating agents.

Surgeons, more especially in active military practice, formerly gave wine to support the strength after severe wounds; and on the field this is a most admirable practice, but not after the unfortunate sufferer has been for any time in the hospital. No medical man, when serving with the army, should omit to carry with him a canteen of good wine, or spirits diluted. As Hennen, in his "Military Surgery," has remarked, many men sink beyond recovery for want of a timely cordial before, during, and after operations; and many of the primary operations would be rendered much more favourable in their results by the administration of a single glass of wine. While elsewhere he remarks,—"restriction in the use of wine is one of the most difficult to effect in military hospitals, but is one that calls most loudly for attention. The idea is absolutely erroneous, that a large quantity of this cordial is necessary in in the advanced stages of fractures and wounds." In hospital gangrene a liberal allowance of the best wine that can be procured is necessary, where there is no inflammatory diathesis present.

Wine is a most valuable medicine in erysipelas; but again, the greatest judgment must be exercised before you venture to prescribe it, and the state of the pulse must be the great indication of the measures which you are to pursue in the treatment of a formidable disease, which affects individuals of such different constitutions. This is one of those maladies in which a medical man must have great knowledge of his science, for be assured no one mode of treatment is adapted to all cases, or to all climates.

My valued preceptor, the late Dr. George Pearson, often mentioned in his lectures the surprise he felt, on his first settling in London, to find that erysipelas was cured by bark and wine here, whilst he had been in the habit of seeing the most practical men of Edinburgh successfully treat it with venesection. He wrote to his friend Dr. Duncan, the learned Professor in that University, stating the fact, and it was some time before he was fully satisfied that he was following the right path, more particularly as he found his friend in the North still pursuing, with the best results, the other plan. It very often happens that a combination of the modes of treatment is necessary, the antiphlogistic being the first stage; the puncturing, as originally recommended by Dr. Dodson, of Greenwich Hospital, the use of the nitrate of silver, as I have before pointed out, and, towards the end of the disease, bark and wine, frequently are necessary. The moment you find what Abernethy called a shabby pulse, you must freely give wine, and you must keep up the action, not allow the system to fall below a certain point; every eight hours sometimes is too long to wait, though that is the time generally spoken of; a small quantity may be given at each time, but that should be very frequently, so that a large proportion be taken in the course of the day. There is one hint I would give you,—where there is a hired nurse of worthless character, that oftentimes a good deal of wine is consumed, but the patient has not the benefit of it.

Dr. Marcet, physician to Guy's Hospital, determined to try which plan of treatment of erysipelas would be most successful, the antiphlogistic or the cordial system. He placed two individuals labouring under a disease which bore very similar characters, close to each other; to the one he gave tonics, generous diet, wine, and the stimulating medicines; to the other salines and low diet, and blood was also abstracted from the arm; both these persons recovered, but the one who had been treated with the wine and the tonics recovered very rapidly, whilst the other lingered for a very considerable length of time in a very debilitated state.

Abernethy has observed that where erysipelas attacks the lower orders of this town, who weaken their constitutions by the excessive use of ardent spirits, that gin may sometimes be advantageously employed as a remedy, being at once the evil and its cure. He stated that he saw in the hospital two cases of this disease, which proved the truth of his remarks. A man had erysipelas very severely; his head was swollen to an enormous size, and his recovery by every person thought impossible; it was discovered one day that his wife brought him some gin. He declared that he was better from having drank it, was consequently permitted its

continuance, and to the astonishment of all, he got rapidly well. Not six weeks after this there was another man similarly circumstanced brought into the same ward, and having, from the result of the case just mentioned, formed a high opinion of gin, the eccentric surgeon directed the sister to give it in this case also, and this patient recovered as speedily as the former. He was in the habit of speaking very highly of a port-wine poultice in sloughing sores and in gangrenous sores, where the gangrene was much disposed to spread. In one of his lectures he mentions the case of a girl in the hospital who had a gangrenous sore in the pudendum, to which a great variety of applications had been made without any beneficial result, at last a port-wine poultice was applied, and with such immediate good effect that, although he had before despaired of her life, the sores were quickly brought into a healthy state.

In whatever disease you may administer wine or the alcoholic fluids generally, you should always be careful as to the state of the skin; if it be hot and dry you must not attempt to give it, but when the heat is about the natural standard, that is about 98° of Fahrenheit, you may almost invariably give it with safety, and if the nature of the disorder really demand it, with advantage. Dr. Currie has very justly observed in his excellent work on the effects of water, cold and warm, as a remedy in fever and other diseases, when the mind is vacant, the stomach empty, and external impressions excluded, alcohol, like opium, has a tendency to induce sleep, as sleep, however, approaches, the heat of the body rises, especially on the surface and extremities, and stimulating the heart and arteries to increased action, produces a state of agitation with which sleep is often incompatible; hence the administration of alcohol in fever requires the same precaution as that of opium.

The general opinions in favour of wine and the rules to be observed in fevers, intermittent, continued, and nervous, are to be found in Huxham's work on fever, in Cullen's Materia Medica, Pringle, Fordyce, Blane, and Monro, all contain some useful remarks; nor must I forget to recommend to your perusal the work of Dr. Trotter, to whose memory I think the Temperance Society is in justice bound to raise a monument, for no one ever pointed out the evils which result from the alcoholic liquors more forcibly, nor is there any writer in the medical profession who has produced a greater sensation upon this subject, than he did; and although such distinguished men as Dr. Parry and Dr. Lambe have also given us their opinions, yet the authority of Dr. Trotter has been quoted as the legitimate opponent of the fermented liquids, in every shape and form in which they can be offered to man.

CALCAREOUS DEPOSITS IN THE TONSILS.

To the Editor of THE LANCET.

SIR:—The accompanying specimen of calcareous deposit may, perhaps, throw some light on Mr. Burford's case of calcareous concretion, published in THE LANCET of April 14. The patient from whom this was obtained is an old woman, aged 74, who has been subject to calcareous deposits in the tonsils for more than thirty years, during which time at least twenty have formed, some larger, some smaller, than the one sent. A very small nucleus at first forms in the substance of the tonsil, which gradually, increases in size, causing great irritation, until at length, in the course of some months, the tonsil ulcerates, and the substance is either coughed up or purposely removed. When I last saw her, in November, there was one in the left tonsil, considerably advanced towards maturity. Is it not probable that Mr. Burford's case was one of a similar nature?* I remain, Sir, yours respectfully,

THOS. CHANDLER.

58, Paradise-street, Rotherhithe,
April 18, 1838.

MEDICAL RELIEF TO THE POOR.

AT the meeting of the newly-elected Board of Guardians of the Driffield Union, Assistant-Commissioner Revans in the chair, Mr. Harrison, the medical officer of the Union, stated his inability to continue the arduous duties of his office at the present inadequate salary. He stated to the Board that he had to attend to the sick-poor of forty-six parishes, extending over sixteen miles from his house. On the day of the meeting of the guardians he had to remain at the Board during the sitting, and to supply all the medicines, for which he received 120*l.* a year; in the medicines alone he was a loser by the contract, without taking into account the keep and salary of an assistant, and the expenses of an extra horse. After a long discussion the guardians informed Mr. Harrison that they highly approved his services, and wished their continuance, but they could not increase his salary; on hearing this determination he immediately resigned, and the Board ordered that tenders to supply the poor with medicine should be advertised for.—*Hull Paper.*

The Driffield Board of Guardians have advertised for a surgeon for eleven parishes of that Union, who is to supply medicines and attendance for the poor, for the munificent sum of 16*l.* a year.—*Hull Paper.*

* The deposit in Mr. Burford's case was probably formed in the bronchial glands.—ED. L.

ON THE

MORTALITY AND SICKNESS OF SOLDIERS

ENGAGED IN WAR.

BY T. R. EDMONDS, ESQ.

THE maintenance, in a state of efficiency, of an army engaged in a campaign is attended by a great sacrifice of human life and health; the extent of this sacrifice is capable of being estimated by the aid of the proper statistical documents, such documents have been furnished to me, and they are now, together with the results, submitted to the examination of the public.

The sources of inefficiency of an active army are very imperfectly understood; the lists of the killed and wounded are commonly supposed to comprise nearly the whole losses of an army; the numerical strength of an army is commonly supposed to represent its real and effective strength; the deaths and the sickness caused by disease, fatigue, or privation, are generally passed over as insignificant. Few people appear to be acquainted with the fact, that in a long campaign the deaths through fatigue, insufficient nourishment, and exposure to cold, are much more numerous than the deaths caused by battle. Another important fact, not generally known, is, that in a long campaign one fourth part of the army is, at most times, disabled by sickness and unfit for duty.

The principal military effort, or series of efforts, made by England in modern times is that which led to the ejection of the French from the Peninsula of Spain and Portugal, and which terminated soon after the battle of Toulouse, fought on the 10th April, 1814. The army under the command of the Duke of Wellington was employed six or seven years in accomplishing the object of the struggle, but the greater portion of the operations of the war was comprised within the latter half of this period. The numbers killed and wounded during the years 1808, 1809, and 1810, did not amount to more than the sixth part of the numbers killed and wounded during the remaining period of the war. In the first three years the average strength of the army did not exceed 30,000 men; in the last three years and five months, the average strength of the army employed was 61,511 men.

In the Adjutant-General's Office, at the Horse Guards, there are preserved monthly returns, for a long period, of the living, the sick, and the dying, of every regiment of the British army, wherever employed. I have had the good fortune to be allowed access to these records. Permission was obtained for me in the year 1828 to have drawn up, in any required form, abstracts of such papers as I might deem most useful. In the exercise of the privilege accorded, I applied for a full detail of the total loss experienced by the peninsula army, subsequently to Christmas 1810. I considered that the knowledge of the particulars of this loss would suffice to afford a correct idea of the destructive effect on life and health, produced by a vigorously-prosecuted war, on an army generally victorious and rarely suffering from disastrous retreats.

One of the principal objects of the present inquiry is, the determination of the total loss of life (whether from disease or from battle) incurred by the peninsula army in a given time, distinguishing officers from private soldiers. Another object of inquiry is, the determination of the average proportion of the army constantly sick; the proportion killed in different battles, and the proportion wounded, as well of officers as of privates, also form parts of the present investigation; the relative mortality, in the same battles, of officers of different ranks and arms, is also proposed for consideration. In addition to the campaigns and battles of the Peninsula, the battle of Waterloo and the short campaign connected with it, will be passed under observation.

During the last 41 months of the peninsula war, or from the 25th Dec., 1810, to the 25th May, 1814, the total deaths of private soldiers of the army amounted to 33,829, or 825 per month; the total deaths of officers in the same time amounted to 940 or 23 per month. The average numbers living during this period, derived from 41 monthly musters, were 61,511 privates, and 2710 officers; consequently, the average annual rates of mortality during this period were 16.1 per cent. for privates, and 10.1 per cent for officers;* that is, the total mortality of privates was more than 50 per cent. greater than that of officers.

On comparing the mortality of officers and privates, at different seasons of the year, it is found that the excess in the mortality of privates exists only during the winter, the season generally passed by the army in cantonments; during the summer (25th March to 25th Sept.) there is no sensible difference between the mortality of officers and that of privates; during each of three summers, the deaths of officers were, to the deaths of privates, in the proportion of 1 to 25 nearly; during each of two winters, the proportion became that of 1 to 70; in the third winter an exception occurs, and the proportion coincided with the average for the year; it is accounted for by the army having kept the field during this winter, contrary to the usual custom. During the 41 months, the total deaths of officers were, to the total deaths of privates, in the proportion of 1 to 36; there was living, at the same time, one officer (including non-

* These rates coincide with the rates, during peace, of English officers and privates in Jamaica.

combatants) to 22½ privates, or one combatting officer to 25½ privates.

During the months in which battles were fought, the mortality of officers is always high relatively to that of privates. On inspection of Table 1 it may be seen that in those months wherein the deaths of officers have been most numerous, the proportion of deaths of officers to deaths of men arrives at a maximum. For example, the greatest number of deaths of officers occurred in the month of April, 1812, corresponding to the siege of Badajoz. In the same month there died 1311 privates; so that there were only 17 deaths of privates to one death of officers, which is less than one half of the general average. A similarly high relative and absolute mortality of officers, is observable during the months in which the battles of Fuentes d'Onor, Salamanca, Vittoria, Pyrenees, and Toulouse were fought. Since the greater number of battles are fought during the summer, the higher relative mortality of officers to privates in summer than in winter, may be considered as accounted for by battles being proportionally more destructive to officers than privates. The number of deaths of officers during any month, is generally indicative of the quantity of fighting during that month; but the number of deaths of privates is of very little value in this respect. The deaths of privates are, in several instances, as numerous during months in which there was no battle, as during months in which important battles were fought.

In battle there is a great difference between the mortalities of officers of different ranks. Field-officers and captains suffer much more severely than lieutenants, who again suffer more severely than ensigns. The mortality of captains from battle is double that of ensigns. It seems probable that this difference in the mortality is dependant upon the difference in the age of the parties, the juniors being more likely to survive a given wound than their seniors. Perhaps, however, the relative positions occupied in battle by officers of different ranks may cause the differences in the mortalities. A captain, in order to set a good example to his company, will frequently place himself in a conspicuous and exposed situation, will be in the front rank, and will be most in advance to meet the enemy. On the fall of a captain his place will be filled by a subaltern, whose duty it will be to expose himself to a similar and increased risk of death.

The total deaths from battle are made up of the killed and dead of wounds. In the returns made to the Adjutant-General's Office the causes and dates of deaths of officers are specified, but the causes and dates of deaths of privates are not so specified.*

The relation between the killed and dead of wounds among officers may thence be ascertained; and it may be presumed that a similar relation exists between the killed and dead of wounds among privates. In order to obtain the total deaths from battle during the last three years and five months of the peninsula war, I have taken the numbers killed as stated in the "Sketches" of the late General Stewart, who collected them from the Gazettes of the period; and I have added, as dead of wounds among privates, a proportion of the killed equal to that ascertained to exist between the dead of wounds and the killed among officers.

The number of officers who die of wounds after the day of action, is generally equal to a little more than one-third part of the deaths occurring on the day of action. Such was nearly the case, at the five battles—Talavera, Salamanca, Vittoria, Orthes, and Waterloo, as may be seen on inspection of Table 6. The deaths on the day of action are generally *four* times as great as the numbers dying of wounds in the 10 succeeding days. And the deaths during any period of 10 days after action, are generally four times as great as the number of deaths in the period of 10 days next following.

During the last 41 months of the peninsula war, the proportion of captains and subalterns killed was at the rate of 4.9 per cent. per annum. The proportion of privates killed in the same period was at the rate of 3.2 per cent. per annum. By adding one third part to these numbers for dead of wounds, we shall have the total annual mortality from battle,—6.6 per cent. for officers, and 4.2 per cent. for privates. Since the deaths of captains and subalterns, from all causes, during the same period, was 10.3 per cent. per annum, and since the deaths of privates, from all causes, was at the rate of 16.1 per cent. per annum, it follows that the annual mortality from all causes except battle was—3.7 per cent. for captains and subalterns, and 11.9 per cent. for private soldiers.

Although it is well ascertained that in the entire peninsula army, the mortality of officers from battle was 50 per cent. greater than that of privates, it is not, however, certain that so great a disproportion exists between the officers and privates who have been actually engaged in the same combats. For there is reason to believe that a greater proportion of privates than of officers is absent when a battle is to be fought. In the first place 22½ per cent. of the private soldiers of the peninsula army, is the proportion generally absent on account of sickness. In the next place a proportion of 8 per cent. is generally detached for various purposes, "on command" as it is termed. The returns to the Adjutant-General's Office make no mention of the officers absent through sickness, or from being "on command." It is

* I possess, however, a variety of returns from the same office, applicable to periods subsequent to the peninsula war, in which has been introduced the distinction of the causes of deaths of privates.

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highly probable that the proportion of officers absent from these two causes, did not exceed one-half of the proportion of privates absent from the same causes. The apparent excess in the mortality from battle of officers over that of private soldiers would then be subject to a considerable reduction, if those who have been actually engaged are alone compared. Such a diminished excess is, however, to be understood as restricted in its application, to battles of an ordinary degree of severity. In the harder fought battles of the Peninsula, as at Waterloo, the mortality of officers was more than 50 per cent. greater than that of privates, regarding only those who were actually engaged.

The extraordinary amount of sickness suffered by the peninsula army, is a subject well deserving the attention of the public. That an English army of 61,511 men, during a period of three years and five months, should have had 13,815 men, or 22½ per cent. constantly sick, and that no inquiry should have been instituted as to the causes of the sickness, is a serious national reproach. As the officers of the same army, and the private soldiers of the cavalry and artillery suffered in no extraordinary degree from sickness, there appears to be no sufficient or satisfactory reason for the total private soldiers of the army having suffered such a vast amount of sickness. If due inquiry had been made it would probably have been found that the causes of this sickness were capable of being removed without much difficulty, as the sickness from wounds did not exceed 1½ per cent. (the proportion wounded in a year being 15 per cent., and the average duration of each case of sickness from wounds being assumed to be the tenth part of a year). A very great pecuniary saving to the nation might have been effected by the removal of these causes of sickness; for, by reducing the proportion of sick to 6 per cent., there would have been set free from the hospitals 10,000 men, to be added to the effective force of the army.*

The excessive sickness suffered by the peninsula army was accompanied by a proportional excess in the mortality. The general law connecting sickness with mortality is, that there is one death wherever there are two years of sickness. An excess of 10,000 constantly sick would, according to this law, be productive of 5000 deaths in the year. In the present case the proportion of death to sickness being somewhat greater than the usual proportion, indicates the sickness to have been severer than that commonly observed. Instead of two years to each death, the proportion of one year and ten months of sickness to each death, is found to have prevailed in the peninsula army. This proportion has been obtained by diminishing the total deaths by the numbers killed and the numbers of dead of wounds in the 10 days following actions; and comparing the deaths thus reduced with the total amount of sickness observed.

The form of returns for officers, as now made to the Adjutant-General's Office, is partially defective, and does not yield in all cases, direct information. The returns are made under the heads,—field officers, captains, subalterns, and staff. It is under the head "staff," that a double defect exists. In the first place, combatants are not distinguished from non-combatants,—a distinction manifestly desirable. In the next place the living staff and the dying staff do not comprehend the same classes of individuals. The staff living comprehends only regimental staff, while in the staff dying are also comprehended the deaths of such of the general staff as are not attached to regiments. In order to remedy these defects I have assumed the total staff combatants to be equal to 2·7ths of the numbers returned as staff. The adjutants are the only combatting portion of the regimental staff, and form the seventh part of it. I have assumed the general staff omitted to be equal in number to the adjutants of the army.

It may be useful to observe, that to each battalion of infantry are attached one lieutenant-colonel, 1½ majors, 9 captains, 18 lieutenants, 9 ensigns, and 1 adjutant—combatting officers. One paymaster, one quarter-master, one surgeon, and two assistant-surgeons, are the non-combatants attached to each battalion. At the five battles, Talavera, Salamanca, Vittoria, Orthes, and Waterloo, the average numerical strength of each regiment of cavalry was 476 men, and of each battalion of infantry 831 men. The peninsula army was most *numerous* in the month of November, 1813, but it was strongest in May, 1813 (immediately before the battle of Vittoria), when it contained 57,402 privates in health. Statements of the force of English armies, apparently contradictory, are frequently published. In some of these statements the force is represented by the number of rank and file "present and fit for duty." In other statements all the rank and file, whether present, sick, or on command, are included. In other statements (which method is here adopted) the serjeants and drummers are added to the rank and file; and the force of the army is estimated according to the total number of privates receiving pay.

46, Regent-square, and 10, Chancery-lane,
April 21, 1838.

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* Since writing the above I have seen it stated that a similar high amount of sickness was suffered by the French army. In July, 1809 (immediately before the battle of Talavera) the French army in the Peninsula amounted to 275,000 men, of whom 61,000, or 22¼ per cent. were sick.

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(1.)—TABLE showing the Number of Deaths of Officers and of Privates which occurred during each of 41 Monthly Periods, in the English Army employed in the Peninsula of Spain and Portugal.

Month.	Officers	Privates.	Month.	Officers	Privates.	Month.	Officers	Privates.
1811:			1812:			1813:		
January	9	276	April	77	1311	July	28	350
Feb.	6	238	May	11	595	Aug.	28	1208
March	9	121	June	10	385	Sept.	68	1207
April	7	211	July	40	785	Oct.	24	996
May	62	1321	Aug.	24	628	Nov.	33	809
June	26	677	Sept.	43	859	Dec.	34	823
July	12	484	Oct.	32	1595	1814:		
Aug.	11	420	Nov.	33	980	Jan.	16	598
Sept.	17	458	Dec.	10	1011	Feb.	17	726
October	17	593				March	46	2513
Nov.	9	604	1813:			April	54	1280
Dec.	6	923	Jan.	13	2171	May	11	442
			Feb.	18	1606			
1812:			March	10	777	Total in 41 Months	940	33,829
January	13	902	April	8	535			
Feb.	9	847	May	3	469	Average Monthly	23	825
March	6	393	June	30	702			

(2.)—TABLE showing, for the same Army, the Proportional Mortalities of Officers and Privates during Summer and Winter; also, showing the Number of Privates Living, and the Number Sick, on the 25th July and on the 25th January of three years.

Half-yearly Periods.	Deaths of		Deaths of Privates for one Death of Officers.	Mortality per Cent. per Annum.		Privates at middle of each Season.	
	Officers.	Privates.		Officers.	Privates.	Living.	Sick.
1811....Summer	135	3571	26.5	10.7	12.5	56,933	12,277
1811-12..Winter	60	4262	71.0	4.6	14.5	58,664	13,405
1812....Summer	205	4563	22.3	15.0	14.7	62,987	17,033
1812-13..Winter	116	8140	70.2	8.0	24.8	65,644	17,513
1813....Summer	165	4471	27.1	11.7	14.0	63,868	12,698
1813-14..Winter	170	6465	38.0	11.5	19.3	67,121	14,144
Total in 41 Months	940	33,829	36.0	10.1	16.1	61,511	13,815
						Mean Numbers.	

3.)—TABLE showing the Total Number of Officers of different Ranks who were Killed, or Died of Wounds received, in each of Five Battles.

Names of Battles.	Field Officers.	Captains.	Lieutenants.	Ensigns and Cornets.	Adjutants.	Staff, other than Adjutants.	Total Deaths.
Talavera....	3	13	23	4	1	2	45
Salamanca..	2	18	21	5	1	1	48
Vittoria....	6	10	19	7	1	1	44
Orthes	1	10	9	2	1	.....	23
The 4 Battles	12	50	72	18	4	4	160
Waterloo ..	22	66	58	30	5	5	186
Total 5 Battles	34	116	130	48	9	9	346
Relative Mortality of each	241.7	135.4	100.0	Rank in the five Battles.			

(4.)—TABLE showing the Total Deaths of different Ranks which occurred in the Peninsula Army during 41 Months, ending 25th May, 1814; also, showing the average Number Living, and the proportional Mortality of each Rank during one Year.

RANK.	Total Deaths during 41 Months.	Probable Distribution of these Deaths.		Average Number Living during the 41 Months.	Proportion Living of each Rank.	Mortality from all Causes per Cent. per Annum.
		Killed and Dead of Wounds.	Dead of Disease & Privations			
Field Officers	87	56	31	157	58	16.2
Captains	239	168	71	543	200	12.9
Subalterns	517	315	202	1602	590	9.5
Staff	97	27	70	414	152	6.8
Total Officers	940	566	374	2716	1000	10.1
Captains & Subalterns	756	483	273	2145	790	10.3
Privates.....	33,829	8899	24,930	61,511	22,648	16.1

(5.)—TABLE showing the Total Number of Killed and Wounded during the last Three Years and Five Months of the Peninsula War; also, showing the Proportion of the Living, Killed, Wounded, or Dead of Disease in one Year.

RANK.	Killed.	Wounded.	Casualties during one Year per Cent.				
			Killed.	Wounded.	Killed and Dead of Wounds	Deaths of Disease.	Deaths from all Causes.
Captains	126	551	6.8	29.7	9.0	3.8	12.9
Subalterns.....	236	1435	4.3	26.2	5.8	3.7	9.5
Captains & Subalterns	362	1986	4.9	27.1	6.6	3.7	10.3
Privates.....	6674	31,546	3.2	15.0	4.2	11.9	16.1

(6.)—TABLE showing for each of Five Battles the Deaths of Officers which occurred on the Day of Action, and in successive Periods of Ten Days, reckoned from the Day of Action.

BATTLES.	On Day of Action.	During the next 10 Days.	During the next 10 Days.	During the next 10 Days.	After 31st Day.	Total.
Talavera	32	10	1	1	1	45
Salamanca	34	8	0	3	3	48
Vittoria.....	25	11	4	2	2	44
Orthes	16	7	.....	.....	.....	23
The Four Battles....	107	36	5	6	6	160
Waterloo	138	31	7	3	7	186
TOTAL.....	245	67	12	9	13	346

(7.)—Comparative view of the Living and Dying at the Battles of the Peninsula, and at Waterloo; Officers of different Ranks and Arms being distinguished. The Mortality of Privates at any battle is represented by the Total Deaths (from all causes) of the Month in which the Battle was fought.

RANK.	Living.		Deaths.		Deaths to 100 Living.		
	Peninsula: Each of Four Battles.	Waterloo.	Peninsula: All 4 Battles.	Waterloo.	Peninsula: Each of Four Battles.	Waterloo.	Average rate in each of the Five Battles.
Field Officers ..	146	139	12	22	2.1	15.8	4.8
Captains	481	519	50	66	2.6	12.7	4.6
Subalterns.....	1416	1523	90	88	1.6	5.8	2.4
Staff Combatants	107	114	8	10	1.9	8.7	3.2
Total Officers } Combatants }	2150	2295	160	186	1.9	8.1	3.2
Officers of different Arms.							
Infantry	1669	1571	142	133	2.1	8.5	3.3
Cavalry	292	434	15	44	1.3	10.1	3.7
Artillery, &c.....	189	290	3	9	.4	3.1	1.1
Total.....	2150	2295	160	186	1.9	8.1	3.2

Officers compared with Privates.—(Orthea excluded.)

BATTLES.	Officers.	Privates.	Officers.	Privates.	Officers.	Privates.
Talavera	1034	38,552	45	994	4.4	2.6
Salamanca	2318	62,088	48	787	2.1	1.3
Vittoria	2674	63,827	44	702	1.7	1.1
Waterloo	2295	47,583	186	1907	8.1	4.0
Total 4 Battles ..	8221	212,050	323	4390	3.9	2.1

(8.)—Table showing, on the 25th day of each of Five Months, the Number of Privates Living, the Number Sick, and the Monthly Deaths of the English Army employed in the Campaign of Waterloo.

Month Ending	Privates Living.	Of whom Sick.	Dying during the Month.
1815:—May 25th.....	43,184	2059	——
.. June 25th	47,583	8852	1907
.. July 25th.....	58,774	8142	322
.. August 25th	68,626	7426	251
.. September 25th	68,984	6917	212

MEDICAL SOCIETY OF LONDON.

Monday, April 2nd, 1838.

Mr. Bryant, President.

GENUINE AND MODIFIED SMALL-POX.—CONSTITUTIONAL CHARACTER OF LOCAL DISEASES.—EXTENSIVE TUBERCULAR DISEASE.

Mr. Dendy stated, that, from experiments he had lately made, he had ascertained that the inoculation of a patient from one labouring under modified small-pox might, in the first instance, produce the disease in a modified state, but that the continuance of the practice would undoubtedly give origin to the genuine small-pox.

Dr. Whiting observed, that the experiments of inoculating patients from cases of modified small-pox, had been repeatedly tried, and the genuine disease was always produced.

Dr. Bennett related the case of a child, who came under his care, 29th May, 1837. She was two years and a half old, and had been considered in good health until a few months ago, since which time she had suffered from deranged bowels, and had not appeared to thrive. Three weeks since, without any appreciable cause, inflammation and tumefaction of the integuments between the scapulæ occurred, and had increased up to the above date. There was at this time a tumour occupying the space between the inferior angles of the scapulæ having very much of the general appearance of anthrax, but less circumscribed, and not of the same livid hue. On the surface of the tumour there were several irregular circular openings, showing the cellular tissue in a sloughing state. The tumour was hard, hot, and of a deep red colour, but did not appear to be very painful. The child was suffering a good deal from irritative fever. A crucial incision was made in the centre of the tumour, completely through the cellular tissue, and poppy fomentations and poultices were ordered to be applied. A dose of jalap and calomel, with saline mixture, was prescribed, strict directions with regard to diet being given, and light farinaceous food recommended.

June 1. The tumour had increased in size, and several other deep circular ulcers presented themselves towards the circumference of the swelling, having the same ash-grey sloughy bases. The incisions also presented the same sloughy appearance. There was more inflammation, and the fever was greater. The bowels had been freely moved, the evacuations being dark-coloured and offensive. The treatment already described was continued; two grains of Dover's powder, with three of hydrarg. c. creta, were ordered to be taken every night, and a little castor oil in the morning. On the 6th of June the integuments of the whole back were more or less implicated in the disease; there were great heat and redness, and a vast number of small deep ulcers occupied the integuments, so that the child's back had the appearance of one large honeycomb. These ulcers, which were most of them of an irregularly circular form, were the result of pustules of a furuncular character, many of them presenting but little surrounding redness, others having an inflamed margin. The pustules might be termed erythematous, were it not that they evidently implicated the cellular tissue beneath the dermis. The pulse was quick; the tongue red and more dry; considerable emaciation; some tumefaction of the abdomen (which, however, was free from pain on pressure); great thirst, and the irritation so severe that neither the child nor its mother could obtain any rest. Slight pressure, gentle friction, and the poppy fomentations afforded some relief. The general character of the local affection, and the child's whole condition seemed now to call for more support, and for medicines of a tonic character. Dr. Bennett, therefore, ordered small doses of quinine and ammonia, beef-tea, and arrow-root and milk, together with the continuance of the Dover's powder, and the hydrarg. c. creta, and the same local applications. On the 7th and 8th, the local affection had still further extended, so that a few pustules even reached the integuments of the abdomen; there was not, however, more irritation. The same plan was pursued; a little brandy being ordered with the arrow-root. On the 11th the irritation and the fever had a good deal subsided, and the appearance of the back had improved; the bark was omitted in consequence of some griping and irritation of the bowels, and small doses of arsenic substituted. From this time the case went on well, as far as regarded the local affection, which eventually was completely cured. The child never recovered its health, however, and mesenteric disease gradually developed itself. Strict attention was paid to the diet, but the appetite became so voracious that it was impossible to carry into effect the dietetic rules that were given. The bowels were regulated with rhubarb and soda; iodine and frictions, with the hydriodate of potash were used. Dr. B. lost sight of the child in July, but at this time it had confirmed tubercular disease, both of the chest and abdomen.

The child died in November, and Dr. B. was requested to open it.

Necropsy.—The external appearance was that of the most extreme emaciation; the belly was large, and the back scarred from top to bottom. *Chest.*—The lungs were tubercular throughout, and tied down by firm adhesions to the pleuræ costales. The upper lobe of the right lung was completely destroyed, forming one large cavity

filled with purulent matter. There were several large vomicæ in the left lung. *Abdomen.*—Some effusion into the peritoneal cavity. The liver was adherent to the peritoneum, and in its substance were two or three tubercles in a softened state. A single crude tubercle in the spleen. The intestines were adherent, here and there, by bands of false membrane passing between the convolutions; the mesenteric glands were one mass of tubercular disease. There were tubercular depositions between the mucous and submucous coats of the small intestines; the mucous coat in many spots ulcerated slightly, so as to expose the tubercular depositions giving rise to the ulceration; in other parts more completely, so as to lay bare the muscular coat; and in other instances, again, the peritoneal coat was all that remained, and this, in one or two spots on the point of perforation.

He (Dr. B.) had related this case to show the constitutional origin of local diseases; the gradual development of the tubercular disease, as the back healed, was remarkable. He believed the local affection to have been modified by a peculiar condition of the nervous system in this case.

Mr. DENDY considered that the disease in the back was not the original complaint. He commented on the frequency of tubercular disease in children, and the numerous tissues which it, at that time of life, involved. Great caution was necessary in treating the cutaneous diseases of children. Local measures should not be resorted to, unless internal remedies were at the same time employed.

Dr. T. THOMSON had seen a similar case to that detailed by Dr. Bennett. In this case pustules, resembling ecthyma, appeared on the chest of a child; the pustules went into a state of phagedenic ulceration, in spite of various applications, and the strictest attention to the state of the stomach and bowels. Quinine was tried, but increased the mischief. He had lost sight of the case during treatment. That these cases depended on a a peculiar state of the nervous system was probable, and explained why tubercular disease attacked so many parts at once. The treatment pursued in many instances determined the part affected. Thus, for instance, if calomel and other irritating purges were given, the bowels suffered; if local remedies and astringents were applied, the head became affected; while an inert mode of treatment, with low diet, ended in phthisis.

Dr. WHITING believed, that the supposition that the nervous system was exclusively at fault in such cases, was an error, the vascular system being implicated in an equal degree. The disease might have been originally pure ecthyma, or furunculus; but some constitutional derangement having interfered with the regular progress of the disease, sloughing was produced. But where was the evidence of nervous disturbance? The grand secret in such cases was to attend to the stomach and bowels. Children were free from that mental excitement which so frequently disordered the nervous system of adults, and were therefore less liable to nervous irritation; but their alimentary canals were frequently more disturbed from the use of improper diet, and hence arose an ulcerated state of the mucous membrane of the bowels, with tubercular disease of the mesentery, and a deterioration of the whole mass of the blood. He submitted, that stimulants should not be immediately employed, because there was sloughing; but respect should be had to the condition of the alimentary canal. He related some cases to show that nutritious food was sometimes sufficient to relieve a disordered condition of that canal, and, at the same time, severe diseases depending on that condition.

Dr. BENNETT had been guided by the principles laid down by Dr. Whiting; but he had arrived at a point in his case where the local disease had become so extensive that the patient would have sunk without the use of stimulants. He had referred the modified form of the disease to a peculiar condition of the nervous system, because there was a predominant excitability of it in children; and because the eruption had been characterised by a remarkable want of power, a form of inflammation attributable to derangement of that system.

Monday, April 16th, 1838.

Mr. PILCHER, President.

THE PRESENT EPIDEMIC FEVER.—MERCURY AND BLOODLETTING.

Mr. HEADLAND called the attention of the Society to the gradual, but certain extension of an epidemic fever of a peculiar form, several cases of which he had lately seen. The disease generally came on in a hurried manner, and in some instances, at first, resembled delirium tremens. The peculiarities of the affection, as far as his experience went, consisted of the presence of an eruption of a bright scarlet colour, not elevated, and coming on in the early stages; a remarkably clean state of the tongue in the majority of cases; a sweaty state of the skin, and a peculiar slowness of the pulse, if the fever continued for any time. The disease was unusually fatal; he had heard, that in St. Bartholomew's Hospital, one out of every three cases, and in St. Thomas's, one out of every six and a half, were fatal. The treatment he had found most successful consisted in the administration of small doses of the hydrarg. c. creta, with saline draughts, laxatives, and a rigorous attention to diet.

Dr. BENNETT had seen many cases of th epidemic, and noticed, in some instances,

the presence of an eruption, in the centre of the petechiæ. This eruption required to be examined with great minuteness to be detected. In some cases it consisted of papulæ, which went on rapidly to desquamation; sometimes the eruption went on to the formation of very minute pustules. His experience regarding the state of the tongue, differed from that of Mr. Headland. He (Dr. B.) had found the tongue, at first, always coated with a thick yellow fur, the edges, however, subsequently became of a scarlet colour, and in some cases the whole of the tongue became red.

Dr. WHITING had had some experience in the epidemic. He had seen instances of it in which the spots were of a scarlet colour, others, in which they were dark, and many cases in which there was no eruption, though the disease, in every other respect, was similar, and occurred in the same families as the cases in which the eruption was present. Regarding the treatment, he thought the simpler it was the better; the common effervescing draught, in most instances was sufficient; the application of leeches to the temples, when required, he had also seen of benefit. With this treatment, conjoined with free ventilation of the apartment, he had succeeded in saving all the cases which had come under his care this year, numbering about twelve. In only one instance, that of a farrier, who was a drunkard, had he found it necessary to give a stimulus, and in this case he used ammonia. Though he had seen no fatal cases this year, he lost several patients with the epidemic last year; these persons resided in places favourable to the disease assuming a low type. He did not think the affection was one *sui generis*, but that an adjunct cause was in operation, producing the petechia, such as a peculiar state of the atmosphere.

Dr. CLUTTERBUCK had seen many cases of the prevailing epidemic. He had noticed considerable diversity in the appearance of the eruption; in some cases it was of a bright red colour, in others dark coloured, while in others the ordinary petechiæ of fever were present. It was not uncommon to see the eruption in all its varieties in one subject. The same variety was observed regarding the other symptoms, as is usual when fever prevails to a great extent, the modification being determined by the state of the atmosphere, the diet, and the strength of the patient. He had found in the present epidemic that in the majority of cases the pulse was frequent, though in some it was slow. In short, the same variety, in regard to cases, existed in this as in other fevers, and no conclusion was to be drawn from individual instances. Regarding treatment, he was not prepared to say that any particular mode was advantageous; generally speaking, a passive treatment, with attention to the evacuations, keeping the patient clean and in a pure air, and ventilating the apartment, was sufficient. He questioned whether it was in our power to interfere with the disease by treatment; the greater number of cases did well. He had found bleeding necessary only in one case where there was secondary inflammation in the abdomen. He had seen cases in which he was not satisfied that bleeding did not do harm. Cases in which quinine, ammonia, and wine were given, with the view of gaining strength, did not answer the purpose intended. He thought the passive treatment, generally speaking, the best.

Monday, April 23*rd*, 1838.

MR. BRYANT, President.

SMALL-POX. — INFLUENCE OF PRIMARY AND SECONDARY VACCINATION ON THE SYSTEM. — HAVE TIME, OR PECULIAR DISEASES ANY INFLUENCE ON THE PREVENTIVE POWER OF VACCINATION?

The PRESIDENT exhibited some specimens of fractured patellæ, in one of these the bone had been broken into four parts; ligamentous union had taken place.

After a few observations on the treatment of injuries of the ligaments about the knee-joint,

Mr. CRISP said, as small-pox was very prevalent at the present time, he should wish to inquire of the members their opinion concerning the efficacy of revaccination.

Mr. LEESE had revaccinated a great number of patients; he thought it very advisable that this proceeding should be resorted to when patients had been imperfectly vaccinated. He almost invariably found that the second vaccination was great in its effect in proportion as the effects of the first were small. Many persons were protected by the second vaccination who were not safe from the first; this was in consequence of the first vaccination not having been perfect; when perfect, however, and there was a certain degree of symptomatic fever, it was as safe a preventive as though the patient had suffered from small-pox. He had revaccinated a family of five grown persons. In one of these, a male, there were several marks, and in him the second vaccination had little or no effect; it had more effect on two young ladies who had two marks on each arm; more still on one who had only two marks on one arm, while on another who had only one cicatrix, the second vaccination went through a regular course. Regarding the effect of time in wearing out the influence of vaccination, he thought it had little to do with it. He had revaccinated a patient twenty-five years after the first vaccination, the influence of the first had been in no way interfered with by this length of time.

Dr. T. THOMSON inquired if it was probable

that the occurrence of any severe febrile disease in a person would erase the impression of vaccination from the system? Small-pox had of late been very prevalent; might the occurrence of the late influenza have had any influence in removing the protective power of the vaccination?

Mr. DENDY was satisfied with the production of one vesicle, if this was a genuine one, surrounded by an extensive areola, and productive of severe constitutional symptoms. He did not mean, by an extensive areola, the occurrence of extensive common inflammation of the arm arising from deep and extensive perforations in the introduction of the matter; this, he thought, tended rather to interfere with the production of the genuine cow-pock. He believed that there had been three sources from whence new matter had been lately obtained, —one through Mr. Leese, another in Germany, and a third in France; he believed it was from the last-named source that Dr. Gregory had obtained his supply. The Parisian practitioners had employed the new matter extensively, and considered its effects were rather different than those of the old matter. He (Mr. D.) thought the new matter did not possess any additional efficacy.

Mr. PROCTER inquired if any member had seen death result from the great inflammatory action which sometimes accompanies vaccination; a friend of his had lately lost a child from this cause. The little patient was previously in excellent health.

Mr. DENDY had seen three cases in which death occurred from the inflammatory action resulting from vaccination. The late Dr. Walker, whom he spoke of with much respect, had frequently so many patients to vaccinate, that he performed the operation most slovenly. He (Mr. D.) had seen patients in Bond-court with the blood flowing in a perfect stream down the arm. Many of these cases were followed by erythematous inflammation. When the matter was introduced into the cellular tissue inflammation was more likely to follow, than when the punctures were made more carefully. Two of the patients he had seen perish from inflammation attendant on vaccination were from Bond-court, and he attributed the fatal result to the manner in which they had been vaccinated.

Mr. CLIFTON considered that if the constitution was affected to a certain extent by one vesicle it was a sufficient security. He had seen several cases in which severe inflammation and sloughing had followed the performance of vaccination. In two cases in which genuine small-pox followed vaccination, both patients suffered from this inflammation to a considerable extent; the only value of secondary vaccination, in his opinion, was in cases in which the first vaccination was not perfect; in cases where it was perfect revaccination could only be of benefit by quieting the mind of the patient.

Dr. WHITING said, that from opinions he had heard expressed in that Society on a former occasion, it would appear that some gentlemen did not think revaccination could always be safely employed,—that there was a tendency to sloughing from the proceeding, and that one or two fatal cases had occurred. If this is the fact, are we to recommend revaccination? If his memory served him rightly, Mr. Cooke, the Secretary to the Hunterian Society, had seen six cases in which sloughing followed revaccination, one or two of which ended fatally.

Mr. CRISP had revaccinated pretty largely, and in no one instance was the proceeding followed by bad effects. The effect of revaccination on the Prussian army would not lead to the inference that the operation was in any way unsafe. What kind of symptomatic fever were we to consider indicative of the full efficacy of vaccination, and how were we to distinguish it in young children? In some cases there was no perceptible constitutional effect.

Mr. DENDY considered it quite unphilosophical to believe that a secondary vaccination should be attended with danger when the constitution had already passed with safety through the affection before.

Mr. CRISP thought, that as we were frequently unable to ascertain whether the patients we were called on to revaccinate had suffered from constitutional symptoms from the first operation, the proceeding was advisable.

WESTMINSTER MEDICAL SOCIETY.

Saturday, April 21, 1838.

DR. WILLIAMS, President.

HARPER AND JOYCE'S NEW PATENT FIRE BOXES. —NATURE OF THE COMBUSTIBLE MATERIAL EMPLOYED.—THE PRODUCTS OF COMBUSTION. —EXPERIMENTS ILLUSTRATIVE OF THE DANGER OF USING THE MACHINE,—ITS ADVANTAGES.

THE evening was occupied by Mr. Everitt's promised lecture on the new patent heating boxes of Messrs. Harper and Joyce, which have lately occupied so much of the public attention. After having made some preliminary observations on carbon and its various combinations with oxygen, and demonstrated, by a series of experiments, the leading characters of carbon and wood charcoal, carbonic oxide and carbonic acid, Mr. Everitt proceeded to examine into the merits of the new patent stoves of Messrs. Harper and Joyce, and for this purpose he examined, seriatim, the fuel, called by the patentees "prepared fuel;" the mechanical construction of the fire boxes; the mode of setting them in action and using them; the

exact chemical nature of the products of combustion; and then drew a series of general conclusions from the facts thereby demonstrated.

First. *The Fuel.*—This, in appearance, resembles ordinary wood charcoal; a hundred parts by weight, on being heated in a nearly closed vessel, lost eight per cent. of weight, most of which, on being collected, was ascertained to be pure water; when burnt in a platinum vessel, one hundred parts left two and a half of ash, resembling that left by ordinary charcoal; on being boiled in distilled water, and the solution filtered and evaporated, it yielded a small quantity of alkaline carbonates; a fixed quantity being made absolutely dry, and subjected to combustion in the apparatus of Liebig, was found to contain 97 to 98 per cent. of pure carbon. A small portion burnt in pure oxygen, yielded carbonic acid.

Second. *The Fire Machine.*—This consists essentially of an elongated cylinder standing on feet, having inserted into the bottom a hollow, inverted, truncated, brass cone; the broad base of the cone being upward and horizontal is not pierced with holes; but the portion going downwards and inwards is perforated by numerous apertures, by which the external air enters, mixes with the fuel around it, and thus keeps up the combustion. The cylinder is closed on the top by a circular well-fitted cover, in the middle of which is an aperture, which is so constructed that it can be kept open, partially closed, or entirely closed, at pleasure, by which the exit of the air is regulated, and consequently, the rate of combustion. The cylinder in some of the machines is surrounded by a second external cylinder, leaving a space of an inch or an inch and a half between the two. The mode of lighting it is to make a small portion of the fuel incandescent by a small grated apparatus, sold for the purpose; this fuel is then put into the bottom of the cylinder, and the rest of the space filled up with cold fuel; the cover is then put on, the aperture being left open to its full extent until the furnace is sufficiently ignited, and can be subsequently regulated at pleasure; the combustion of the charcoal goes on very slowly at the bottom of the cylinder around the cone, and as this charcoal burns away, the upper portion of the fuel supplies its place. When first lighted, the whole of the water above referred to, comes off mixed with the hot air. In some of the machines a small vessel containing water is placed on the cover of the cylinder, by which contrivance a little aqueous vapour constantly mixes with the hot air coming from the stove.

Third. *The Products of Combustion.*—For the purpose of ascertaining the exact composition of these products, Mr. Everitt adopted the following very simple plan of procuring specimens of the air for examination:—he took a small tube about twelve inches in length and half an inch in diameter, and open at both extremities, one of which was closely fixed to the aperture in the cover of the machine; by means of this the current of air could be directed into any receiving vessel, and was collected in the following manner;—a graduated bell-jar, with its lower edge ground flat, having a glass plate which could exactly close it, which latter being placed a little on one side, so as just to admit the tube, the jar was brought down until the top of the tube nearly touched the upper part of it; in this position it was allowed to remain for several minutes, the hot air of the stove replacing the cooler atmosphere of the receiver; the jar was then slowly elevated, and the instant the upper part of the tube left the jar, the glass plate was slided over the mouth of the jar, so as to completely retain its contents. The specimens of air thus obtained were subjected to the following tests.—1. A lighted taper placed in the air of the furnace was at once extinguished. A like result followed a mixture of equal measures of this and common air; also, the same with one of this and two of air. 2. Agitated with lime or barytic water, the presence of carbonic acid was demonstrated. 3. Into a graduated glass tube over mercury, five cubic inches were introduced, some liquor potassæ being added; after a little agitation an absorption of one-fifth of the whole took place, thereby showing the exact proportion of carbonic acid present. 4. In another portion, over mercury, a little piece of phosphorus was melted without its becoming at all luminous, or the gas being diminished in the slightest degree in bulk; by this the entire absence of any free oxygen was proved. 5. A portion, after being deprived of its carbonic acid by potassa, was mixed with pure oxygen, and electrical sparks passed through the mixture; this occasioned no alteration in its bulk, nor was there any more absorption on the addition of more liquor potassæ, proving the absence of carbonic oxide. 6. A bird being introduced into the gas as collected from the furnace, died in less than half a minute; and another introduced into a vessel containing sixty cubic inches of this gas, and the same quantity of pure air, died in less than three minutes.

The quantity of Carbonic Acid produced by a Stove, the Cylinder of which is nineteen inches high, and six and three quarters wide.

A stove of these dimensions holds 37,480 grains of fuel, which under ordinary combustion, is consumed in twenty hours. As this fuel consists of ten and a half per cent. of moisture and ash, the rest being carbon, the 37,480 grains contain 33,544 grains of pure carbon, which is consumed in twenty hours, or 40,253 grains in twenty-four hours

Now, as six of carbon in becoming carbonic acid, produce twenty-two grains, the above 40.253 grains will produce 147.594 grains, which as 100 cubic inches of carbonic acid weigh 47½ grains, will measure 312.368 cubic inches, or 180¼ cubic feet. Now, as the disturbing causes, particularly ventilation, are so various in various apartments, it would be impossible to make any serviceable calculation on the precise amount of carbonic acid which would remain in a room of a given size, after any number of hours; but the following comparison may be of service. Physiologists have determined that a healthy individual produces in the twenty-four hours 38.304 (Davy) cubic inches of carbonic acid by the function of respiration, or, according to Allen and Pepys, 38.232 inches, the mean of which results is 38.268; hence 312.368 cubic inches, as produced by the stove in twenty-four hours, divided by 38.268 gives a result of 8.15; or, in other words, an individual who burns this stove in his apartment, is placed in circumstances, as regards the production of carbonic acid, as though he had eight companions. As regarded the physiological influence of such an atmosphere, Mr. Everitt offered no opinion, but referred to Dr. Christison's celebrated work upon poisons, pp. 744 to 754 inclusive, for a summary of the results of poisoning by carbonic acid gas.

Deductions from the above Experiments.

First. The fuel used in these machines differs from common charcoal only in its being perfectly charred, having no portion of the wood undecomposed, hence differing in no essential particular from *well burnt* charcoal.

Second. All the air which passes through the furnace, after uniform combustion has been established, is entirely deprived of its oxygen, which is replaced by the same bulk of carbonic acid.

Third. That in a stove of the above-named dimensions 5 lbs. 7-10ths of pure carbon are consumed in the twenty-four hours, producing 180¼ cubic feet of carbonic acid, which is as much as eight men produce by respiration in the same period.

Fourth. That the implied fact in the following statement by the patentees, that by the use of their prepared fuel nothing deleterious is given off, is not correct:—"To guard against accidents from the neglect or mistake of servants using *common charcoal*, a pipe will be attached to apparatus for bed-rooms."

Opinions on these Deductions.

First. The quantity of heat given off by the combustion of any weight of the "prepared fuel" is precisely the same as that given off by a similar quantity of ordinary well burnt charcoal.

Second. That if only a part of what Christison has detailed respecting the injurious nature of carbonic acid be correct, then in no case should these furnaces be used, unless there is provision made for carrying out of the apartment all the products of combustion. Mr. Everitt offered no opinion as to the economy of the stove as a heating agent.

In conclusion Mr. Everitt said it was due to the patentees to state, that as soon as they became acquainted with the positive results he had arrived at, they at once expressed their determination to attach to every stove they might in future make, an apparatus by means of which the products of combustion would be entirely carried from the apartment.

The thanks of the Society were unanimously voted to Mr. Everitt for his interesting lecture, by a very numerous audience.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

Tuesday, April 10th, 1838.

Dr. Bright, President.

ON INCREASED THICKNESS OF THE PARIETES OF ONE OF THE VENTRICLES OF THE HEART, WITH DIMINUTION OF ITS CAVITY.

By George Budd, *M.B., F.R.S., Physician to the Seamen's Hospital Ship, Dreadnought.—Communicated by* Mr. Perry.

After observing that unnatural thickness of the parietes of one of the ventricles of the heart, first noticed by M. Bertin in 1811, and called by him "concentric hypertrophy," is generally acknowledged, by pathologists, as a diseased condition, the author proceeds to explain the opposite opinion of M. Cruveilhier, who holds that the obliteration of the cavity, and the proportionably increased thickness of the parietes, are only results of the mode of death. "The hearts of all those," says M. Cruveilhier, "whom I have had an opportunity of examining, who died by the executioner, have presented the double phenomenon in the highest degree, the parietes of the ventricles were in contact at all points." The dissent of so respectable an authority from the received opinion, together with the corroborating observations of Mr. Jackson, who found the same condition in those who had died of cholera, induced the author to compare the results of his own experience with the records of authors, with the view of determining whether it must be considered a disease, or whether it is merely a passing condition of the ventricle. The author relates four cases which have come under his own observation, in which, on dissection, the state called concentric hypertrophy was found, yet no obstacle to the circulation existed in the valvular apparatus of the heart. Of the

fifteen cases which he finds recorded by other writers, the author observes, that four were of this kind; that six offered considerable obstruction to the circulation, from thickening and cartilaginous induration of the valves; and that the remaining five presented evident signs of congenital malformation of the heart. After a careful examination of these several groups of cases, the author comes to the following conclusions:—First,—That there was no permanent diminution of the cavity during life, in the cases recorded of concentric hypertrophy of one of the ventricles, unconnected with valvular disease. Secondly,—That in the six cases complicated with extensive valvular disease, the diminution of the cavity cannot be explained by the hypothesis of an obstacle behind it, and in some of these cases the existence of an obstacle before it, renders it highly probable that this diminution was merely a passing condition of the ventricle; and as the appearances of concentric hypertrophy were not more marked in these cases than in those of the former category, and as the symptoms of obstacle to the circulation, observed in these cases, were such as would result from the diseased valves alone, we cannot admit the existence of concentric hypertrophy in the cases we are now considering. Thirdly,—That concentric hypertrophy of a ventricle, with obstruction at its discharging orifice, and an extraordinary passage for the blood, occasionally exists as a congenital malformation, and generally on the right side. Fourthly,—That hypertrophy of the heart, to whatever extent it exists, when it is exempt from dilatation of the cavities, and from disease of the valves, does not produce any of the symptoms of an obstacle to the circulation through the heart.

After a few words by Drs. Bright, Burne, and Macilwain, the Society adjourned.

DIETARIES.

The Earl of Winchelsea has given notice in the House of Lords, that after the recess he shall bring forward a motion to effect some improvements in the New Poor-Law, giving, in the first instance, to the guardians a power to regulate the dietary without the control of the Commissioners.

Before any further steps are taken the subject must be investigated by men accustomed to the accurate methods of science. Vague statements are of little avail; such observers as Mr. Mott create error; the elements of weight, and time, and number, must be applied before what Count Rumford called a *science of nutrition* can exist. No body of men can conduct inquiries in this department of practical physiology with such a probability of success as medical practitioners, and we do hope this opportunity of conferring a boon on the community will not be allowed to escape. The following hints may be of some use in giving the inquiry an uniform direction:—

The inquiry into the effect of diet may be divided into three heads:—(1.) The chemical analysis of different kinds of food. (2.) The determination of the actual quantity of food, solid and liquid, consumed. This is easily done in public institutions by counting the number of persons on the diet-list, and setting down the weight of each kind of food consumed daily. The quantities consumed weekly, divided by the daily average number of persons, is the weekly dietary; the total quantity consumed, divided by the sum of the number of persons dieted every day, is the daily dietary. The following is a tabular example from the books of the Small-Pox Hospital in 1784:—

Date.	Officers and Servants.	Weight in Pounds Avoirdupois, and 10ths of a Pound.				
		Meat.	Bread.	Butter.	Cheese.	Beer.
1784:	Days.					Pints.
November 11-17	63	82.6	60.6	8.6	2.	144
18-24	63	72.1	60.6	9.0	2.	144
25, December 1	63	75.1	60.6	8.8	2.	144
2-8	63	78.8	60.0	9.6	2.	144
9-15	63	78.4	60.6	8.8	2.	144
16-22	63	76.0	60.6	9.0	2.	144
23-29	63	73.8	60.6	8.8	2.	144
Total	441	536.8	424.2	62.0	14.	1008

This is the total amount of food cooked for nine persons in seven weeks = 49 days, multiplied by 9 = 441 persons dieted 1 day, or 1 person dieted 441 days. Hence it may be deduced, that each person had 8·5 lb. of meat, 6.7 lb. of bread, 0.98 lb. of butter, 2 lb. of cheese, weekly, and 19¼ oz. of meat, 15½ oz. of bread, 2¼ oz. of butter, ½ oz. of cheese

daily; containing, according to the proportions assumed by Dalton, 12½oz. of carbon. A similar tabular form was kept of the diet of the small-pox patients: the daily average of bread was 12 2-5ths oz.; flour, for pudding, 1½ oz.; oatmeal, for gruel, ½ oz.; suet, 1-10th oz.; milk, ½ pint; containing nearly 10 oz. of carbon. The weight of vegetables should not be omitted. A similar table of the waste also should be kept, and a third of the cost of the different articles. This would make the observation complete. It is better to enter the weight of each article in the uncooked state, and leave the determination of the loss of weight by cooking to another series of observations. Where gruel, puddings, &c., enter into the articles of diet, the weight of flour, oatmeal, and other solids they contain should be given. The quantity of liquid drank is determined in the same manner by weight; the proportion of alcohol, and solid matters in spirituous and other liquors, the chemists must determine. The same tabular form may be adapted to private families. The quantity of food taken at different ages, and by the two sexes, should be ascertained. The quantity agricultural labourers eat, when the supply is unlimited, medical practitioners, in the country, may gather from intelligent farmers, who feed their servants and labourers at their own tables. The limited supply upon which they subsist in some counties must be ascertained at the homes of the labourers themselves. The quantity of different kinds of food consumed in each of the four seasons should be contrasted; and the quantity taken in harvest and winter compared, with the hours of labour and sleep. The diet of artisans in cities, and their labour, may be placed in juxta-position with those of agricultural labourers. The subject forms a vast field of interesting physiological research.

By the foregoing series of observations the relative quantity of food required in different circumstances may be discovered, so far as it is indicated by instinct and appetite; the result may be tested by ulterior observations. The relative quantity of sickness, and the mortality of classes living on different kinds and proportions of food, will prove what diet is most conducive to health; the first step will be to ascertain the average number on each diet at different ages; the second, to count the deaths in a given time; the cases of sickness, the average number constantly sick, and the diseases should also be enumerated; but the deaths, where there is not time for a complete investigation, will furnish a certain index of the sanitary state. In workhouses or gools the effects of a dietary may be determined by weighing the unhappy inmates when they enter and leave the place.

These positive inquiries are urgently pressed upon the attention of all practitioners who cultivate medicine as a science. The pages of THE LANCET will, I trust, be open to the results of inquiries on the subject, conducted in an accurate spirit. It has a direct practical bearing on the treatment of diseases. W. F.

ABSTRACT OF THE

LAST REPORT

FROM THE

NATIONAL VACCINE ESTABLISHMENT.

To the Right Hon. Lord John Russell, Sec. of State for the Home Department.

MY LORD:—The amount of deaths by Small-pox this year, within the bills of mortality, has been less than in any former one since Vaccination was first promulgated; but we are sorry to say that the disease has prevailed with its usual mortality in several parts of the country.

The apathy under which some thoughtless people wait until danger from Small-pox be at their very door; the unreasonable distrust of others of the protective power of Vaccination, and the artful schemes of unworthy inoculators, who avail themselves of such ill-grounded fears, contribute to countenance and to keep up the practice of inoculation; by which a perpetual source of contagion is supplied, to the great danger of those who have not already had the disease, or have not been vaccinated properly.

A notion has been entertained by not a few that the Vaccine matter has lost its influence by time; but this is not supported by the analogy of any other poison. The virus of Small-pox itself has lost nothing of its force in the course of 200 years; and we are enabled to state a strong fact, with perfect confidence, in proof of the efficacy of the Vaccine matter at present, viz., that of more than 70,000 vaccinated in descent with successive portions of the matter originally collected by Dr. Jenner, 38 years ago, Vaccination has manifested its peculiar influence in all; though of this number some hundreds have been subjected to the severest trials by exposure to Small-pox in its most fatal form.

The rarity of an example of disfigurement by Small-pox now to be found in the theatres, in churches, or any large assemblage of the people, affords some proof of this; but unfortunately, it was propounded by its original discoverer too broadly, in recommendation of the novelty of Vaccination, that any person might perform the operation successfully, when, as we confess, and desire to have it made known, that, to do justice to the merit of Vaccination, it ought to be performed by well-instructed and skilful surgeons, who are able to discover whether there be any temporary ill prevailing in the habit of the patient to be submitted to it, in the form of a slight cutaneous eruption, whether the prevalence of any epidemic disease may interfere with the success of the process

for it has been remarked by several experienced Vaccinators, that the influenza of last year did make it necessary to repeat Vaccination more than once or twice before it took its proper effect.

Merely to have been vaccinated has satisfied multitudes of those who apply to our establishment for this protection against Small-pox; and we cannot help lamenting that it is so difficult to prevail upon parents to bring back their children, at a proper distance of time, to ascertain whether the operation has been successful, or requiring to be repeated to ensure its efficiency.

This Board has been unremittingly occupied, and has supplied 20,000 charges of lymph more this year than it has sent out in the course of any former one; and not only have our Army and Navy, and the Colonies, been supplied, but most of the capitals of Europe have availed themselves occasionally of our resources, in which they express their entire confidence. We have, &c.

HENRY HALFORD,
ANTHONY CARLISLE,
EDWARD T. MONRO, M. D.
C. HUE, M.D. Registrar.

METALLIC TRACTORS.—ANIMAL MAGNETISM.

To the Editor of THE LANCET.

SIR:—Within the last few days a set of the "Metallic Tractors" (purchased in the year 1800 for five guineas), with a work of 100 pages, full of wonderful cures performed by them, have been placed in my hands, and such appears to have been the credulity of the day, that I find documents in their favour from Lord Rivers, Dr. Fuller, Rev. Dr. Rippon, *cum multis aliis*, in this country; and also from 42 physicians and surgeons, 22 clergymen, two professors of natural philosophy, &c. &c., in America; in short, it appears "all the ills that flesh is heir to" have been effectually cured: so that nothing but the tractors were required to render an easy passage through life, both to "man and *horse*." The party whom these tractors belonged to, believed them of so much service, that she ordered a second five-guinea set in order to lend them to her less opulent neighbours. May I ask,—Where are now either tractors or credulity enough to believe in their efficacy? They are absorbed in the all-empowering "animal magnetism;" and some of your readers may not find the following extracts (on this head) uninteresting.

In the "Life of Benjamin Franklin," the following passage occurs:—"In the year 1781, when animal magnetism made a great noise in the world, particularly at Paris, it was thought a matter of such importance that the King appointed Commissioners to examine into the foundation of this pretended science; Dr. Franklin was one of the number."—"After a fair and diligent examination, in the course of which Mesmer repeated a number of experiments in the presence of the Commissioners, some of which were tried upon themselves, they determined that it was a mere trick intruded upon the ignorant and credulous. Mesmer was thus interrupted in his career of wealth and fame, and a most insolent attempt to impose upon the human understanding baffled."—P. 150, Vol. I., London, 1806.

Jefferson, who succeeded Franklin at the court of France, in a letter to Dr. Smith, of Philadelphia, says, "about this time also the King of France gave him (Franklin) a signal testimony of respect, by joining him with some of the most illustrious men of the nation, to examine that ignis fatuus of philosophy, the animal magnetism of the maniac Mesmer, the pretended effects of which had astonished all Paris. From Dr. Franklin's hand, in conjunction with his brethren of the learned committee, that compound of fraud and folly was unveiled and received its death wound."—Page 547, appendix.

The following, however, I think worth adding:—

Valentine Greatraks, in the year 1666, published a letter to Mr. Boyle, in which he says,—"About four years since I had an impulse, or a strange persuasion in my own mind (of which I am not able to give any rational account to another) which did very frequently suggest to me that there was bestowed on me the gift of curing the king's evil, &c." He accordingly cured several cases, by laying on his hands, and "stroking" the parts, as he terms it. Some time after he had another *impulse*, which enabled him to cure ague, gout, violent headach, dropsy, ulcers, &c. One of the reasons he gives for "so vile and humble an instrument" being gifted with the power of curing diseases, is "to abate the pride of the papists (who make miracles the undeniable manifesto the truth of their church), and make use of a protestant to do such strange things in the face of the sun, which they pretend to do in cells." When he laid on his hands and "stroked" any pained part, the pain instantly fled to another, although cloaks, coats, &c., of any thickness were interposed. He cured thus, those possessed of "dumb devils," "deaf devils," and "talking devils." He gives a number of cases certified by Robert Boyle, and other respectable men. The following is one of them:—

"Elinor Dickson, aged 45 years, had a dropsy twelve years in her belly only, without any tumour in her legs, but with a drought, was stroked by Mr. Greatraks, about sixteen days since, at 7 o'clock at night, and drank at the same time about six spoonfuls of his water, and rubbed some of it on her body, which she did of her own accord; the same night she felt a queasiness

in her stomach, and about midnight she felt a rumbling in her belly and stomach, and brake great store of wind, *per anum et per partem domesticam*, and then she made water in very great quantity, as four, five, or six gallons in twenty-four hours, and continued making water, though in lesser quantity, so that at this present day the skin of her belly is as empty as a glove or purse, and wraps over, and hath no drought, and her belly quite down.

"Examined 26th April, 1666, by
"Robert Boyle,
"W. Smith, Baronet,
"W. Denton, M.D.
"Jas. Fairclough, M.D."

I am yours, &c.,
Wm. Tiffin Iliff.

Newington, March 19, 1838.

THE MAN BURIED ALIVE FOR A MONTH IN INDIA.

To the Editor of The Lancet.

Sir:—In your number of the 13th of May last, you have inserted from the "India Journal of Medical Science," an account, by Mr. H. M. Twedell, "of a man who was buried alive for a month, and then exhumed alive." The paper is, as you observe, apparently well authenticated, and certainly deserves the place which it has obtained in several periodicals. Lieutenant Boileau, of the Bengal Engineers, whose account is quoted, is a distinguished scientific officer, employed on the great trigonometrical survey of India; and the other gentlemen, whose names are mentioned in the paper, are public men, who are extensively known over our eastern empire. The facts stated are therefore undoubted. Shall we then, admit that the account furnished in that paper, "may be only interesting to future philosophers, as the first of a series, showing that air, food, and water are not entirely necessary to sustain existence, and that a man may betake himself to the grave and pass away a month comfortably, if assured that a shovel may be exerted to release him at the appointed hour."—(Lancet, 257.) I believe that we cannot admit so strange a supposition, and that an explanation of the mystery which is more accordant with our common notions may be found.

An officer of distinguished talents, a traveller, and an acute observer of man and of nature, told me, many years ago, that he had seen a Hindoo in the northern circars, lying on the road side *with his head buried in the earth*, and receiving the alms of the native troops as they passed; that he stepped across the man's body, and that he was sure that no deception was employed. Other gentlemen, and the Sepoys also, gave the same account. The explanation may be found in a short extract from a paper published in the "Fanam Magazine" (Penny Magazine of Madras), for April 1834, which was written at the request of the Editor (the present Archdeacon of Madras) to recommend the study of anatomy as one means of enlightening the natives of India. It is as follows:—

"The removing of any one gross superstition, the clearing away of any one kind of successful deception, is conferring more permanent good on a people, than feeding a starving multitude. An almost infinite number of these grind down and smother the intellect of this unhappy land; the forms in which they represent themselves are innumerable, and many have not yet been described. I had sometimes heard, with wonder, accounts of native devotees burying their heads in the earth, and in this situation receiving money from passengers. It was impossible to doubt the persons who spoke of it, but it was evident that there was some trick, which had escaped the observation even of gentlemen of intelligence, and was never suspected by the natives, who rewarded liberally the successful cheat. At length an opportunity of witnessing the thing occurred. It was at new-moon, on a little headland, near Visagopatam, where a crowd of Hindoos were bathing in the sea, and the mendicant partook largely of their alms, as he lay with a large heap of sand piled, as it were, on his head. The appearance was startling; but observing the chest to rise and fall at regular intervals, I found that the heap of sand was too far from the shoulders to be over the mouth. The sand was removed from the face, which was covered with a cloth, and from the termination of this on his neck, he breathed. This will illustrate the manner in which even superficial knowledge can be brought to bear on the rude deceptions under the tyranny of which the high and low of this country groan; and how much might be done to eradicate the evil, which will for ever resist all mere political expedients."

After a brief description of the mechanism of respiration, the following sentence occurs:—"We have seen that the devotee could not exist without enlarging his chest and contracting it; nor is there any means by which he could conceal his doing so."

It is evident that the fakeer of Jalsulmoir, enclosed in a small building, in a cavity only covered with loose stones, had the means of breathing even more freely than my cincar friend; but this will not explain the long-continued abstinence from food, in which there was, probably, no deception, and which is a fact of great physiological interest. It is stated that "he abstains from solid food for some days previous to his interment."—(P. 257.) "For seven days preceding the burial, the man lived entirely upon milk, regulating the quantity so as to support life, whilst

nothing remained to give employment to the excretory organs."—(P. 258.) After his disinterment he presented an appearance of extreme emaciation and debility; his stomach was greatly contracted; he took nothing but a little water till he found that the tone of his stomach was not destroyed, about which he expressed great anxiety. How excellent an illustration is all this of Dr. Thomson's lecture on abstinence, or of any other account of the circumstances modifying the power of enduring, and the proper treatment to be pursued towards persons who have been long subjected to it. How interesting would it be to observe the state of the secretions, the respiration, &c. of this singular person, and might not some important practical inferences be derived from the study? The restoration of the power of motion to the contracted limbs of Hindoo devotees, after being kept for many years in one position, suggested to the *late* Mr. Sheldrake the admirable method of treating deformities, which was described by him in THE LANCET, a method which I have successfully employed under the most unfavourable circumstances.* This must plead as my excuse for occupying so much space, on another instance of what the body can be brought to endure, under the influence of a determined mind. I am, Sir, your obedient servant

JOHN GRANT MALCOLMSON,
Surgeon E.I.C.S. Madras Establishment.
23, Wilton-crescent, March 24, 1838.

MR. PHELAN ON PUBLIC MEDICAL CHARITIES IN IRELAND.

To the Editor of THE LANCET.

SIR:—Your remarks on the medical affairs of Ireland, and your comments on the second clause of the Irish Medical Charities Bill, are judicious and well-timed, and will, it is to be hoped, have their due weight in the proper quarter.

Having given this subject some attention, I beg leave to trespass on you with a few observations, which at the present moment may not be altogether useless.

I propose briefly to inquire first, whether the existing laws and institutions are sufficient to afford medical aid to the sick poor of this country, and if not, to what extent they are defective. Secondly, what mischiefs arise, and are, in future, likely to arise, from the want of sufficient medical aid to the working classes generally. And, thirdly, I shall point out the means by which efficient medical attendance can be had on that class, with proper economy, and a regard to medical science.

Perhaps there are few people so liable to serious diseases as the Irish; the working classes in this country are generally ill fed, badly clothed, and wretchedly lodged, and the habits of many of them are intemperate and irregular. Atmospheric vicissitudes, therefore, as well as contagion, may naturally be expected to cause extensive and injurious effects on a population so predisposed; and, accordingly, we find that inflammatory affections, which soon destroy life, or produce lasting organic mischief, as well as other contagious diseases, affect a very great proportion of them. To this the Legislature has not been indifferent, and at present the law enables us to make quite sufficient provision for all our sick poor, with one exception, which I shall point out, were those who possess property, disposed to put the law into execution.

At present the laws which relate to our medical institutions stand thus: the presenting sessions of each county is empowered to present 1400*l.* per year for the support of one or of two infirmaries, which also get 100*l.* from the Treasury. If there be no fever hospital in the county, the grand jury can have one built at its expense, and a sum not exceeding 500*l.* a year presented for its support, without a shilling of subscription being had from any one; and, if there has been a county fever hospital, district ones may be built, and two-thirds of the expense of establishing and supporting them raised by assessment on the other third, having been previously obtained from subscribers, which previous payment is the condition on which the two-thirds is to be given. For a dispensary, a sum equal to the subscriptions raised can be presented; and the whole cost of erecting and supporting all district lunatic asylums is also assessed.

Independently of this, there is an annual parliamentary grant of about 20,000*l.*, for the support of the Dublin hospitals; thus it will be seen, that about three-fourths of the entire cost of establishing and supporting our public medical charities are paid by the occupiers of land and houses; and it is certain that more than the one half of the other fourth is paid by the middle classes; so that the proportion which falls on the landlords is very small, indeed, though a few amongst them subscribe liberally.

It should be observed, that the institutions which are best supported, and most efficiently conducted, are the district lunatic asylums, but these are entirely under the

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* I am at a loss to account for the little attention which those admirable papers have met with, and for the continued employment of the clumsy and expensive apparatus for club-foot which is still recommended by some of the most eminent surgeons in London; nor do I think that the new operation of dividing the tendons will prevent the treatment there recommended from being one day extensively employed.

direction and control of Government. They have been, however, very injudiciously erected and located, and at by far too much expense; but this may be chiefly attributed to the Commissioners of Lunatic Asylums being an *unpaid* board, and to there being on it no medical man sufficiently acquainted with the subject, or responsible for the proper performance of the duties. Under these laws 36 county or city infirmaries, about 66 fever hospitals, 452 dispensaries, and 10 district lunatic asylums, have been established.

Want of Infirmary Aid.

Though the law empowers the local authorities to establish a second infirmary in each county, this has been done only in one. The reason is, the existing institution receives the entire grant, and the surgeon the entire salary, 100*l.* a year; the interests of the local governors and of the medical officers are opposed to the erection of a second, and no matter how large, or populous, the county, those of the sick poor are sacrificed. At present, outside Dublin, all the Irish infirmaries, both of counties and cities, contain room for only 1280 beds; but of these not above 1000 are usually occupied. This gives only one infirmary bed for every 6000 of the population. It has, however, been clearly ascertained, that in most counties not one-fourth, in others not one-eighth, of the *fit objects* do, or can, obtain admission into these institutions. This will be apparent when it is known that the number annually admitted, including the Belfast and Waterford hospitals, is only 13,500, or one for 540 persons, whilst correct returns published by me, prove that a far greater number stand much in need of infirmary relief. I have found that, at the most moderate computation, above 17,000 fit objects are so circumstanced every year, who cannot anywhere else be done justice to by their medical attendants.

Want of Fever Hospital Aid.

Notwithstanding the laws alluded to, there are ten counties in Ireland in which there is no fever hospital, and in fifteen or sixteen more in which many of the existing institutions are so limited in number, in funds, and in room, that not one-tenth of the bad cases occurring amongst the poorer classes can be or are admitted. The Dublin fever hospitals receive from 6 to 7000 annually, those in the country about 10,500. I have ascertained that at least 30,000 patients of this class, affected with bad fever, and unable to provide themselves with medical attendance, or the necessary food and drink, are unable to obtain fever hospital aid.

Want of Dispensary Aid.

Were our 452 dispensaries properly distributed, according to population, &c., they could be made far more efficient; but when it is known that in some counties there is only one dispensary, on the average, and one medical attendant, to a population of 30,000, in others of 28,000, 23,000, and 20,000, it will be admitted that a very great proportion of the sick poor cannot obtain anything like efficient assistance. I remain, Sir, very truly,

DENIS PHELAN.

(*To be continued.*)

NAVAL SURGEONS.

To the Editor of THE LANCET.

SIR:—You have often stood forward as the advocate of the gentlemen in whose behalf I now address you. Will you, on their behalf, do so once again? So far back as the year 1805 (if my memory serves me), George III. passed an order in council, which directed that the medical officers of the Navy should be placed on a similar footing with their brethren of the Army. Will you have the generosity to ask Mr. Secretary Wood, of the Board of Admiralty, why the above-mentioned order remains a dead letter; why the highly-gifted and well-educated medical officers of her Majesty's naval service are still oppressed, and their claims blinked at the Admiralty; why the assistant-surgeon has not the same privileges as his brother of the Army; and, above all, why the whole of his time, from the date of his first commission, is not allowed, instead of only three years, as is the case at present, for retirement; and why he has not an increase of pay at the end of ten years, like the army assistant.

I write feelingly, Sir, having served seven years and eight months as an assistant-surgeon, chiefly in the West Indian and Mediterranean seas, before I was promoted. The Secretary of the Admiralty must know, that there are men among the naval medical officers of the very first attainments, classical as well as professional, who have carried off the highest honours of their respective colleges; equally qualified with our friend of the "Medico-Chirurgical," to fill what he is pleased to style the "higher walks" of the profession.

I am carried away, Sir, by reading, in my retired nook, some of your last years numbers, just come into my hands, and am thus impelled to write to you on this, to me, "dearly loved subject," for I love the service, though I have now retired from it. I am, Sir, your very obedient servant,

NUPER CHIRURGUS IN CLASSE BRITANNICA.

March, 1838.

THE LANCET.

London, Saturday, April 28th, 1838.

AMONG all the abuses that pervade the medical institutions of this country, none is more flagrant than the monopoly of the hospitals. The history of the insidious encroachments of the officers on the pockets of the students, and on the public charities, would present a remarkable example of infatuation in the governors, of apathy in the public, and of avarice in the members of a liberal profession. The founders and supporters of these institutions demand no fees from the student; in many instances, the doors, so far as they are concerned, are thrown freely open, and every cultivator of medical science has access without any preliminary contribution to the funds of the establishment. But the physicians and surgeons interpose. They stand at the entrance, and insist on dipping their unhallowed fingers into the student's pockets. The usurpation, they persuade themselves, is a prescriptive right. The amount of which the student is deprived, varies from £37 to £84. This is paid, it is said, that he may witness the surgeon's practice, or the physician's practice; and the higher fees entitle him to smear unguents, to apply bandages, and to take orders from the mouth of the oracular Æsculapian, whose deeds it is his duty to observe diligently, and to set before his eyes for imitation in future years. Such an extravagant imposition carries the mind back to the mysteries of the middle ages, when the surgeon had his sympathetic powders, the physician his nostrum and arcana, and when both possessed some pretence for extorting money from him who sought to be initiated into their arts. But no age furnishes anything equal to the Hospital Monopoly; neither History nor Geography can produce its parallel. The Babylonians exposed the diseased by the highway sides; the Jews cast lunatics and lepers out of society; the Scythians ate the superannuated; the savages of the South Sea Islands shot those whom slow disease was consuming; the Namaquas exposed their sick to the wolves of the wilderness: but neither Babylonians, Jews, Scythians, South Sea Islanders, or Namaquas, ever presented an example of a body of persons making merchandise of sick men, trading with disease, and converting the calamities of the poor and destitute into commodities. In this kingdom alone, Hospitals are made Menageries; and the student, whether graduated or not, has to pay 15 guineas to the surgeons, and 30 guineas to the physicians, in order to see the sick for six months. It is five shillings a visit. The Zoological Gardens are accessible on more reasonable terms. BONAPARTE called us a nation of shopkeepers; but he was not aware that we sold the sight of sufferings, and drove a traffic in the dead bodies of the poor. He did not know that hectic cheeks, limbs bleeding under the knife, fevered mutterers, were converted into a profitable spectacle; he did not know that the Temples of Mercy, built by the Benevolent for the succour of their sick brethren, had been seized upon, made property of, and desecrated by their officers; nor that WILLIAM LAWRENCE and his colleagues, drew several thousands of pounds a year from this infamous source of income, or, assuredly, the shrewd despot would have designated us by a fouler name.

At St. Bartholomew's Hospital the fee for unlimited attendance on the physicians' practice is 30 guineas; for a surgeons' dresser, for 12 months, 50 guineas,—*eighty-four pounds!* It will be said, that the sum of £84 is not paid simply for seeing the unfortunate patients stretched out on the beds of that hospital, but for the medical instruction imparted in the clinical observations and lectures. Without entering here into the nice question of the intrinsic value of the instruction given when these exhorbitant fees were first demanded, or their value at the present day in different hospitals, we deny that the clinical lectures are worth more than a fraction of the sum of £84 at the present market price of medical instruction. That price we know is obtained; hundreds of students pay the large sums de-

manded every year for hospital attendance. But the value is derived from three sources: in the first place (we readily admit), from the instruction of the clinical teachers; in the second, from the expense of maintaining the patients and the establishment in which they are assembled; and in the third, from certificates of hospital attendance being rendered compulsory.

It is supposed to be an advantage to have a great number of cases in juxta-position in hospitals; it is presumed that this facilitates diagnosis, that it enables the student to see a greater number of cases in a given time, and that it enables the VINCENTS, the HUES, the HAWKINSES, the JOHN BRIGHTS, and other great geniuses, to shed lustre on the followers in their wake, who would otherwise never witness the daring deeds of these great masters, or have a chance of seeing their practice without sallying with them up obscure alleys and narrow streets, to the peril of their persons, and to the great mirth (with such leaders) of the loose boys, orange wenches, and fishwomen, that perambulate parts of this metropolis.

We do not desire to depreciate the utility of hospital practice, or to overlook the peculiar facilities presented at the large hospitals for the prosecution of morbid anatomy, and for familiarising the eye with appearances after death, necropsies being, from various reasons, not easily or frequently performed in private practice. But if it be considered that the student is preparing for private practice; that many of the diseases in hospitals, where numerous patients are assembled, have a peculiar character, course, and termination; that erysipelas, hospital gangrene, and the absorption of pus after operations, are of rare occurrence everywhere but in hospital wards; that diseases cannot be treated in the morbid atmosphere of hospitals on the same principles as in open, private dwellings; and, again, on the other hand, that there are numerous other institutions where the sick are treated; that there are millions of cases occurring every year in private practice all over the empire, in villages and cities, where, without being shouldered by crowds, the pupil may visit, watch, observe, and, at the same time, render essential service, to the sick; and that there are thousands of talented practitioners well qualified to initiate the neophyte in all the arts of successful practice: when, we say, all these facts are weighed, no one will deny that the field of private practice may present formidable schools, rivalling the hospitals in utility. The hospital surgeons have confessed this. The irresponsible surgical corporations, the hospital surgeons, shut every man out of the profession who has not paid for hospital attendance. The student is driven through the hospitals; he must pay whatever sums are demanded; the field of competition is narrowed, and this is *one* source of the high price paid for hospital attendance.

The *second* element in the value of this article is the expense of maintaining patients. Let us suppose, for an instant, that hospitals are indispensable, but that no hospitals exist, and that medical instruction cannot be carried on without them. In this case hospitals must be built and supported by those who seek for instruction; by proprietary capitalists, who would invest their money profitably, or by teachers who hope for repayment in fees. As these places are ordinarily built, an hospital for 100 patients would cost at least £20,000. Taken at 14 years purchase, the rent would be £1400 a year, and the maintenance of 100 patients would amount to £3000 a year. The expenses would amount to £4500 a year, and 100 pupils at £50 a year each would produce £5000; but in this case £500 a year only would be left for the professors; 90 per cent. upon the fees would go to the maintenance of the institution. Of the fee of £50 only £5 would remain as the remuneration of their labours. Sir Patrick Dunne's Hospital, Dublin, was erected to "promote the success of the school of physic," and the fees of pupils were devoted to the maintenance of patients. At the Jervis-

street Hospital the subscribed funds will support only 35 surgical beds; the College of Surgeons requires attendance at an hospital containing 50 beds; so the surgeons, to render their certificates current, contribute £225 annually to the support of 15 additional patients. This is paid out of the pupils fees; it is an element in the *price* which they pay for hospital attendance. The most remarkable illustration of the part which the expense of patients plays in the standard of fees is furnished by University College Hospital. The entire fees are there devoted to the support of the establishment. Last year 150—160 pupils paid £1036 10s., which constituted the greater part of the expenditure on 121 patients, amounting to £4774. The professors received no part of the sum. The instruction for which fees are said to be exclusively paid, costs absolutely nothing, yet a fee of 25 guineas was deemed to be indispensable.

The intrinsic value of the medical instruction, the *third* element in the price of attendance, cannot be easily estimated; it is so mixed up with the other elements as scarcely to admit of separation. But it is not difficult to obtain an approximation sufficiently near. Dr. LATHAM's perpetual fee, as Lecturer on the Practice of Physic at St. Bartholomew's, is 7 guineas; as Clinical Lecturer he gets 30 guineas. Now, as it cannot be pretended that his services are worth more in one case than in the other, the 23 guineas are an extra charge, levied on the pupils, for permission to visit the patients. The charitable founders support the patients; and the 23 guineas are put into the physician's pocket, in addition to the 7 guineas which his instructions are supposed to be worth. Fifty guineas are paid by a surgeon's dresser; Mr. LAWRENCE, as Lecturer on Surgery, charges pupils 7 guineas; the 43 guineas of the dresser is a sum superadded to the cost of his instructions as a clinical teacher, and is derived from the hospital, independently of his, Mr. STANLEY's, or Mr. VINCENT's, clinical labours.

The course of our argument cannot be misunderstood. The physicians and surgeons to hospitals are entitled to remuneration as clinical teachers, but the proportion of the fees devoted at University College Hospital to the expenses of the establishment, is contributed at all the other hospitals by charitable donations and subscriptions. The patients are not supported by the pupils: yet the pupils are made to pay the same prices as if the establishment were upheld by their fees; and the surgeons use the medical charities, and the sick, as instruments of extortion.

This flagrant abuse may be removed, by breaking up the monopoly of hospitals, and leaving them to compete evenhanded with other sources of clinical instruction. If a sense of shame do not induce the delinquents to abandon the practice of levying SICK MONEY—the black mail (the blood-money) of medicine—the Legislature must interfere, and clear away the foul aspersion from the country. This may be done without interfering with the right which every man has to set his price on his labour. It would not be necessary to place any restriction on the fee for clinical instruction; it would be sufficient to prevent, in the infirmaries supported by subscription, any charge for seeing and visiting the patients. The annual fee at the Edinburgh Infirmary is now £5. 7*s.* 6*d.*; and it is not probable that the fee for clinical instruction at any hospital would exceed £10, if the present abhorred monopoly were abolished.

The fees paid by pupils for hospital attendance have no legitimate connection with the question of remunerating the officers of medical charities. We will examine this point at another time; but have no hesitation in saying now that this remuneration should be paid in fixed salaries, and not in fees.

SINCE the publication of the last number of our Journal, some additional letters have reached us on the subject of the medical returns from the Unions. One practitioner informs us that he has refused to comply with the order of the House of Commons. We trust that a little reflection will induce

him to relax this resolution, as he might subject himself not only to great pecuniary loss, but to much personal inconvenience, by persisting in his refusal to supply the required information. A non-compliance with an order of the House of Commons, is punishable by imprisonment, for "contempt" of the authority of the Legislature. If a person "could not" make a return, the omission, without doubt, is excusable; but if he peremptorily and contumaciously refuse, no appeal for clemency would be heeded for a moment. It is not unlikely that, on a proper application to them, the Commissioners and Boards of Guardians would make to the medical officers some pecuniary compensation for the trouble and expense which they may have incurred, in this instance, in complying with the mandate of the Legislature.

This public notice supersedes the necessity of our replying in private communications to the questions which have been put to us by several correspondents on this subject.

The Wonders of Geology; or, a Familiar Exposition of Geological Phenomena: being the Substance of a Course of Lectures delivered at Brighton. By GIDEON MANTELL, M.D., F.R.S., Mem. Roy. Coll. of Surgeons, &c. From Notes taken by G. F. RICHARDSON, Curator of the Mantellian Museum, &c. 2 vols. pp. 709. London, Relfe and Fletcher, 1838. Coloured Plates and Wood Engravings.

THESE interesting volumes cannot be better introduced to the notice of the readers of THE LANCET, than by the following quotation from the closing remarks of the author, descriptive of the advantages to be derived from a study of geology by practitioners in medicine:—

"Geology, beyond almost every other science, offers fields of research which are adapted to all capacities, and every condition and circumstance of life in which we may be placed. For while some of its phenomena require the highest intellectual powers, and the greatest acquirements in abstract science, for their successful investigation, many of its problems may be solved by the most ordinary intellect, and facts replete with the deepest interest may be learned by the most casual observer.

"To the medical philosopher geology presents peculiar attractions for those hours of leisure and relaxation which are indispensable to the maintaining of a healthy state of mind, for it requires the cultivation and application of chemistry, botany, comparative anatomy, zoology, and physiology,—sciences which form the very foundation of medical knowledge. It exerts, too, the most salutary influence, by calling forth the continual exercise of our intellectual powers; for the desire to explain what is obscure in the natural records of the past, induces a more accurate examination of existing physical phenomena, and of the organisation and habits of those living beings which are within the reach of actual observation. It enforces the necessity of weighing the conflicting evidence of apparently irreconcileable phenomena, of detecting differences or seeking analogies, and of generalising and combining an immense number of isolated facts. The mind thus acquires the power of exercising acute observation, patient investigation, and salutary caution, in drawing inferences and arriving at conclusions,—habits which are of the first importance in the discrimination and treatment of diseases. I therefore entreat my younger medical brethren who have favoured me by their attendance on these lectures, not to be deterred from the pursuit of so legitimate a source of the most elevated gratification, by the apprehension lest their professional success should be retarded by a reputed taste for science. Happily the time is now arrived when the empty boast of possessing *only* professional knowledge is no longer considered to be a proof of superior medical skill, but, on the contrary, is considered as an unequivocal acknowledgment of limited acquirements, and evidence of contracted and imperfect views of the subjects embraced by medical philosophy. They may rest assured that the practitioner who, by the exercise of his reasoning powers in scientific investigations, is capable of comprehending the laws by which organisation and vitality are governed, and is thus enabled, not by mere habit or conjecture, but by cautious induction, to trace the phenomena which are observable in aberrations from health, to those organs on whose functional or structural derangement they may depend, but with which they may appear to hold but obscure or uncertain relations, will ultimately meet with a sure reward in the confidence and approval of the unprejudiced and the intelligent. In this, my last public attempt to encourage a taste for scientific pursuits, I may be permitted to allude to my own successful medical career, in proof that the pursuit of science is not incompatible with a deep devotion to professional duties; and I will venture to add, not from vanity

or presumption, but from an earnest desire to remove the apprehension which, I know, deters many medical practitioners from engaging in pursuits which are so congenial to their taste and education, that so far from my known scientific predilections having proved injurious to my professional prospects, they have, on the contrary, largely contributed towards my success, by affording introductions which otherwise would not have been within my reach, independently of the privilege which, in my estimation, is beyond all price, of communion with the most eminent philosophers of our times."

The view which is thus given of the science of geology is true and forcible. Within a few years the rapid progress which has been made in this great department of knowledge, stands unprecedented in any other branch of science. While the study of astronomy was cultivated with assiduity throughout many succeeding centuries, the facts which were concealed from view in our own terrestrial globe, remained almost wholly uninvestigated and unexplored. In modern times a new era has burst upon us, and while astronomy and the other sciences have not been neglected, that of geology has been pursued with a degree of ardour and intensity which could only have been maintained and kept alive by the interesting discoveries which the geologist was daily making in pursuing his unprecedentedly interesting researches. The volumes before us exhibit the most prominent of the facts which the labours of the geologists have already disclosed; and amongst the most successful of those scientific labourers is Mr. Mantell himself.

On looking at the vast fund of interesting facts which the work contains, one cannot avoid being struck by the circumstance that the results of so many years of labour and hard study should be thus presented to the public at half the price usually charged for an insipid, worthless, trashy novel, carrying with it a tendency to withdraw the mind from every useful occupation, whereas the volumes entitled "The Wonders of Geology," contain within them those materials which are calculated to engage the highest qualities of the understanding, and to induce a train of reflection and habits which may be productive of the highest possible moral and intellectual advantages, not only to young persons of both sexes, but to individuals of mature years and cultivated minds.

In strongly recommending the perusal of these volumes to all classes of our readers, we cannot refrain from congratulating our professional brethren, and all other lovers of science in this metropolis, on the fact that Mr. Mantell has become their neighbour, he having quitted Brighton for the purpose of pursuing his profession as a surgeon in the neighbourhood of the metropolis. He now resides at Clapham. Assuredly if an intellect of the highest order, almost unequalled industry, displayed in the study of medicine and other sciences, can establish just foundations for success in medical practice, a brilliant professional career must be the result of Mr. Mantell's removal to a suburban district of this metropolis.

TREATMENT OF FRACTURED RADIUS WITHOUT SPLINTS.

To the Editor of THE LANCET.

SIR:—I have lately suffered a fracture of my left radius, which I have treated with pasted bandages, forming a strong calico case, extending from a little above the knuckles to near the bend of the arm, fitting about as accurately as a plaster of Paris cast, or mould, and whilst the pasted bandage was drying I kept up extension by a two-pound weight appended to the thumb; so that the enveloping case having an hour-glass character about it, the ends of the bone were kept properly extended, and in good apposition. I tried the punishment inflicted with the routine splints for the first night and during the following day, and then I pulled them off, the irritation of the flexor muscles becoming extreme, and leeches being suggested.

I carried the arm in a pasteboard sling until the 12th day, and then the swelling having nearly subsided, I had the pasted calico bandages applied, and I have been going about with comfort ever since, wearing a coat uncut at the sleeve, the case being so very compact. The bone had united at the expiration of about 35 days, but the muscles and tendons were suffering from the forcible extension produced by my falling on the flag pavement, having been precipitated over the horse's head from a tilbury, on the 6th of February last. I had the case slit up to see that the bone was properly placed, and then re-applied the same well-fitting guard, securing it by another pasted bandage. If agreeable to you, I wish you would put this short notice in THE LANCET. I am, Sir, yours truly,

FRANCIS FOX, M.D.,
Late of Derby.

No. 63, Aldermanbury, London,
April, 1838.

TWO HUNDRED POUNDS REWARD FOR A DISCOVERY.

To the Editor of THE LANCET.

SIR:—There is one branch of medical science well deserving of the *closer* attention of the profession, and which has, I think, been rather neglected, namely, the dissolution of calculi in the kidney and bladder, more particularly in the latter. Probably this might soon be effected if proper experiments were made; and, considering the very great prevalence of calcareous complaints, such discovery is a great desideratum. Crushing and extraction are operations which are only applicable to stones of certain magnitude, while the chief difficulty lays with the small calculi, and debris of large stones, after crushing. I regret not to be rich enough to offer a proportionate reward for such discovery; but, as a very humble individual and a sufferer, I am willing to place 200*l.* at the disposal of any proper persons, to be paid to the discoverer of such a solvent. As a further stimulus to exertion, the experimentalist must bear in mind the certainty of the enormous remuneration to be derived from the numerous sufferers among the rich, who would give thousands of pounds (in many cases) for relief. Let him also consider the internal satisfaction which he would experience as one of the greatest benefactors of the human race, and on the honour and immortal renown which such discovery would infallibly confer upon him; and, though last, yet not least, let him reflect on the blessing of the good God on him for his charitable exertions.

Pray, Sir, have the gastric juices of divers animals ever been tried in the form of injection? Gastric juice quickly dissolves most things. Your obedient and humble servant,

F. SCOTT.

26, Southampton-street, Strand.
April 5, 1838.

*** Gastric juice has never, we believe, been applied as a solvent to metallic, earthy, or other inorganic substances, nor do we see any reason for supposing that it would produce any effect on them.—ED. L.

CORONER'S INQUESTS. VERDICTS WITHOUT MEDICAL EVIDENCE.

To the Editor of THE LANCET.

SIR:—Since the passing of the late Act relative to the payment of medical witnesses summoned to inquests, you cannot but have observed the absurd and iniquitous verdicts resulting from deficiency of medical evidence. It seems to me a most preposterous thing that a jury, totally ignorant of the subject, should be allowed to pronounce such a verdict as the following:—"The child was suffocated in the birth for want of assistance; and great blame attaches to Mr. Barton, a medical pupil of Brownlow-street Hospital, for not attending to the case after having been twice sent for."

It is incredible that the above verdict is going the round of the papers, having been pronounced by a jury in Monmouth-street, Seven Dials, without the least professional evidence to guide their ignorance. Thus through the no doubt honest ignorance of the jury and the malevolence of reporters, whose silence I refused to bribe, feeling conscious of no neglect of duty, I am held up to the world as having been the cause of the death of the child. I was under no obligation to attend the woman but such as might arise from *my own private charity*. When application was made to me, being engaged, I sent them to a neighbouring licentiate, who received no call from them. Soon as disengaged I hastened to the house, according to the direction given me little more than two hours previously, but was there informed that no person of that name, nor a woman lying-in, dwelt in the house. These statements were made at the inquest, where I was told that a wrong direction had been given to me. With respect to the being twice sent for, a little girl, apparently six or seven years of age, came first, to whom I gave the written address of the said licentiate, residing in a neighbouring street. In about five minutes another messenger came, not having applied to the gentleman as directed. He, indeed, never received an application, but the parish midwife, after some delay, was called in, not, however, before the child was born. The father, who is entitled to two guineas from a club on the birth of each of his children, came to me two days after the inquest, with a view to extort money, and asserted positively that the child was crying "for two hours." This he said in order to prove his right to the two guineas, which the club withheld, they requiring proof that it was born alive. The absurdity of the former part of the verdict requires not to be pointed out to any one at all conversant with the subject, the labour having been quick and easy, and the woman doing well.

By directing the attention of the public to this infamous pronouncing of verdicts without medical evidence, by which the mass of hearers may be misled, you cannot fail of obliging all your readers, and none more so than, Sir, your obedient servant,

THOMAS BARTON,

British Lying-in Hospital,
Brownlow-street, Long Acre.

April 13, 1838.

ON THE

COMPARATIVE INUTILITY

AND

EXTRAVAGANT COST

OF THE

PATENT METALLIC RESPIRATORS.

To the Editor of THE LANCET.

SIR:—Having purchased at a sale the other day, and for an old song, the whole series of the "London Medical Gazette," as being well fitted, from its unsoiled binding, to fill up a corner in my bookcase, I had determined to continue taking it in, not from the hope of deriving either instruction or amusement from its pages, but because the perusal of its contributions comfortably reminds me that there are stupid fellows in the world besides myself, and because the portions of Roderick (not Southey's, but Longman's), have, when read at appropriate times, so strong a soporific effect, that I am surprised his friends in the College, in gratitude for his accepting the fellowship which others refused, did not insert them in their new Pharmacopœia. Such was my intention, but I find its late numbers of so low a cast,—the periodical staggering, as it were, on its last legs, and supporting itself on every wayfarer,—that I have determined to relinquish it. One of the principal contributors to the "Gazette" is an individual designated by the editor, Julius Jeffreys, Esq. This, which might appear at first, from its singularity, to be the name of a man of straw, is actually that of the person who advertises an instrument called the "Respirator," which, according to the advertisement, has been approved of by the most eminent of the profession, "of which the inventor himself is a member," &c. &c., and who has been dubbed esquire to make him a fit coadjutor for those bats and medical hereditary luminaries who patronise and write for the "Medical Gazette." This mighty inventor and patentee has been actually permitted to transfer his puffs from the newspapers into the pages of this periodical, and we are fairly entitled to guess that part of the profits as well as the puffs have taken the same road.

Squire Jeffreys has cunningly enough wrapped up his praises of the Respirator in a professed review of a work lately published by the author of the "Elements of Physics," in which work he has had the most unwarrantable presumption, while commending the principle of the Respirator, to hint that a better one might be made than that manufactured by Mr. Jeffreys! Mr. Jeffreys affects great indignation at this, but takes especial good care once and again to insert the commendation, qualified though it may be, of so high an authority, and by his anxiety on this point betrays the grand object of his rigmarole, blundering, and malignant series of papers. The honour of having his advertisements inserted in so imperishable a work as the "Medical Gazette" (for surely that work may be deemed imperishable, so many copies of which are embalmed by the richest snuffs and spices), seems to have elated him beyond all bounds, and quite removed him from his propriety, for not contented with telling us that he is the inventor of the wonderful Respirator, and that nobody knows anything about such matters but himself; forgetful that he is not addressing Judæus Apella, he asserts, that the invention of a self-regulating principle in stoves, for which Dr. Arnott has lately received so much credit, as well as the various forms of stoves to which Dr. Arnott has applied it, were all the previous inventions of himself—Julius Jeffreys, Esq.! In his ensuing papers we shall probably have claims by this modern Archimedes to the steam-engine and the laws of gravitation; but as the callous sceptics living in this incredulous age, do not always place implicit faith in such assertions and claims, particularly if the claimants are of that class who advertise and praise their patented medical inventions, whether of pills or respirators, in the newspapers, I may perhaps be excused for withholding my assent until I have inquired into the merits of his invention of the Respirator, by which we may be better enabled to appreciate the inventive genius of Mr. Julius Jeffreys.

That in very cold weather, or rather in sudden transitions of temperature, there may be an advantage, in delicate states of health, of warming the air previously to its entering the mouth, or nose, in respiration, will be admitted by all who have witnessed the constant untutored practice of covering the mouth with some porous substance under such circumstances, or who have popped the chin into the neckcloth on leaving the theatre on a frosty night. But this is a very different matter from wearing a mass of metallic gauze over the mouth, or paying Mr. Julius Jeffreys two guineas for the license to do so. It is hard to say which of these two proceedings would be the most ridiculous. Were metal a better warmer of the breath than the materials that have been hitherto employed, twopennyworth of iron gauze would answer every purpose, and surely a poor man might save his life at so convenient a price without danger of Mr. Jeffreys' prosecution. Mr. Jeffreys does not deny that a woollen neckcloth is frequently used as a respirator, and that he cannot prohibit its use; but "beware," says he, "how you use metal in any shape or texture, for I have taken a patent for all metallic respirators; and before using any such you must come to my shop and reward me for my wonderful ingenuity." The wis-

dom of taking such a patent was equal to its humanity, if the patentee really believed in its advantages over common means; for, in his selfish eagerness for profit, he must have forgot that metallic respirators are as old as metallic stiffners in neckcloths, through which he would surely not prevent one's continuing to breathe if he chose. So much for the novelty of the *invention* and the value of the patent. A word or two now respecting its utility. He says that metal is superior to what has hitherto been employed, as wool, fur, feathers, &c., because it conducts the heat much more rapidly. It does so; but did Mr. Jeffreys never reflect that there may be too much heat accumulated as well as too little? Did it never occur to him that heat must be given off from the lungs, as well as from the skin, and that whether the heat be much or little it ought to be equally diffused through the air that is respired, which is impossible if the breath be drawn through a metallic substance.

Dr. Arnott, it seems, has a favourable opinion of such artificial modes of defence, and proposes a plan of his own. Dr. Arnott's scientific repute, his invention, amongst other valuable contrivances, of the hydrostatic bed, and his generous present of it to the public, an invention from which suffering humanity will continue to derive comfort and relief after theories and practices now advancing their authors to reputation, will have passed into oblivion; all these entitle his opinion on all such matters to the most respectful attention, but in my humble opinion he over estimates the importance of such means, and recommends a modification unnecessarily complicated for the purpose required. A thick worsted comforter, with a wire stiffner or two in it, is alone sufficient for the male part of the species, and the ladies have always their furs and feathers at hand. Our common mother, Eve, would have found an excellent respirator in a lock of her flowing air.

I have to apologise for this tedious dissertation on a very unworthy subject, as I well know that your columns are better filled than with self-inserted puffs of quackery and humbug, or the exposures and refutation of these. Had I been aware, when I purchased the set of the "Medical Gazette," of what description its contributors were,—that interminable puffs of patents by newspaper adventurers were inserted for some good, solid, perhaps (for here, indeed, there is great virtue in the material), metallic reason, I should have deemed, being neither a butterman nor trunkmaker, the trifle it cost me much beyond its value. I have the honour to be, Sir, yours, &c.

MEDICUS.

April 23, 1838.

ANIMAL MAGNETISM.

To the Editor of THE LANCET.

SIR:—As the subject of animal magnetism is likely to excite an interest in the medical profession, and in the public mind, almost unprecedented amongst modern discoveries, and as every fact, at this early stage of the inquiry into the powers of this most wonderful agent, is valuable, I have forwarded to you, for insertion in your Journal, the following case:—

Sarah Overton, aged 20, a simple and undesigning girl, had become an inmate of the workhouse of the parish of St. Martin, in consequence of her being unable to get a living for herself on account of epileptic fits, to which she had been subject from two years of age. She has been under my care during the last three years, and I have ransacked the whole Pharmacopœia for medicines for her; she has been repeatedly cupped, bled, blistered, had setons in the neck, and her diet has been regulated, without any except an occasional slight alleviation of her complaint. She generally had two or three fits daily, and they sometimes lasted four, five, and even six hours; she was perfectly insensible during their continuance, and often required three or four persons to hold her down on the bed to prevent her injuring herself.

On Tuesday last, April 10th, I was going round the wards of the infirmary, she was then in a fit, and had been so for six hours. Having seen the accounts in THE LANCET regarding mesmerism, and Dr. Elliotson being an authority in its favour, although I had never seen it practised, and was rather sceptical regarding its existence, I determined the next day to try it upon this patient. Without the girl being informed, or having the least knowledge of what was going to be done, or for what purpose, the process was commenced by my pupil, Mr. Vidal, and I sat beside, watching the progress. In about ten minutes she complained of increased weight and pain in the head; I joked with her, and told her it was all fancy. In about five minutes more I found her pulse lower in frequency, she occasionally sighed, and there was a slight twitching of one hand; on being asked a question she attempted but could not answer me, and in twenty minutes her head fell back, and she was in a profound trance. I tried many efforts to arouse her, such as tickling the face and neck with a piece of tape, which I also passed up her nose; I lifted her arm up two feet from the chair and let it fall, and she was shaken by the nurse, all without the least effect; she was carried to bed, where she was allowed to remain half an hour, when, after about half a dozen transverse passes over the eyebrows, she awoke. From that time to the present, Tuesday, the

17th, she has never had a fit, and she has been in every respect perfectly well. Whether they will return I cannot say, but certainly the effect has been most remarkable.

I have six or seven other epileptic cases in the infirmary, which I shall subject to the same process, and shall communicate the results to the public. I am, Sir, your obedient servant,

J. N. BAINBRIDGE.

86, St. Martin's-lane, April 17, 1838.

COMPLAINTS AGAINST PUBLISHERS.

To the Editor of THE LANCET.

SIR:—Will you allow me to complain, through the medium of your Journal, of the conduct of Messrs. Taylor and Walton, of Gower-street. At the end of September, 1837, those publishers advertised a new edition of "Dr. Turner's Chemistry," in two parts, one to be published directly, and the other in November. Instead of fulfilling this promise, they divided the work into three parts, and published the second part upwards of two months after the time that the original second part was promised. The third part (Organic Chemistry) which was advertised for early in January, has not yet appeared. Thus students who, like myself, have purchased the first part of this excellent work, are left without a text-book on this important branch of the science, because these honest publishers do not fulfil their promises.

The conduct of Messrs. Taylor and Walton was exactly similar to this, in reference to the last edition of "Quain's Anatomy." I am, Sir, yours obediently,

A STUDENT.

University College, April 21, 1838.

CORONER'S INQUEST
ON THE
BODY OF A GIRL,
WHO IS ALLEGED NOT TO HAVE RECEIVED PROPER ATTENDANCE
UNDER A MEDICAL CONTRACT.

ON Tuesday, April 17th, an inquest was held before C. Lewis, Esq., Coroner, at the *King's Head* in Buttsbury, Essex, on the body of Emma Sach, aged nine months, who died on the Wednesday preceding. The case excited considerable interest from a rumour that the child had not received proper attention from the medical officers of the Union, Sach, the father, being a labourer, and a pauper of that parish. The Jury viewed the body at Sach's cottage. Mr. W. Butler, Mr. C. Butler, and Mr. Lewis, surgeons, of Ingatestone, and Mr. Carpenter, surgeon, of Chelmsford, were in attendance.

Charlotte (wife of William) *Sach*, examined.—Deceased, who was my child, was aged nine months; she was first taken ill on the 6th of last month, with a coughing and wheezing, the hooping-cough, I believe, but she got better a few days; when she was taken, I went to Mr. Lewis, surgeon, of Ingatestone, and got some stuff, and she got better; about a fortnight after she was taken ill, as she got worse, I went to Mr. Lewis with the child; he prescribed for it, and she was better in a few days. Mr. Lewis called to see her three times, and she had some more stuff; she was better for his attendance.

A Juryman—How long was it between each of these visits? You say he visited her three times.

Witness—He first came to see her on the Saturday, and again on the Monday; he did not see her any more. No medical man saw her again for eight days. Mr. Lewis told me that he was not to attend any more; we were to have the doctor from Chelmsford; and we were not to apply to him for any more medicine. The child was better till Friday; she was taken worse on Saturday, and then my husband went to Mr. Horner (the guardian) to see where we were to apply for a doctor. On Sunday morning we had a doctor from Chelmsford, at a quarter past nine, Mr. Carpenter's assistant; the child was very bad.

A Juryman—What sort of a person is Mr. Carpenter's assistant?

Mr. Carpenter.—He is a Member of the College, and a Licentiate of the Hall.

Witness—He did not give the child any medicine; Mr. Carpenter gave my husband the medicine before the child was seen by the assistant; he brought the medicine home after the assistant. I do not think that it did the child any good; it did not appear to do so. On Sunday night the child was very bad, and we sat up with it. Mr. Carpenter did not see the child at all; his assistant saw it again on Tuesday, without being sent for; he found the child worse than it had been; he did not do anything for her, or leave any medicine; she had none but what my husband brought home on the Sunday morning.

A Juryman—You were rather surprised at that, were you not?

Witness—I had plenty of what my husband brought home on the Sunday; I should think he brought home nearly a pint bottle full, and she took it till the Wednesday morning, when she could not take any more, and died at half-past three in the afternoon. Mr. Carpenter's assistant came on Thursday, when the child was dead.

Mr. Carpenter—When you took the child to Mr. Lewis's, did not Mr. Lewis remark you should not have brought it out?

Witness—I said I thought it was a cold; Mr. Lewis said he thought it would not get over it. Afterwards my husband got an

order for you; he got to your house at a quarter past eight on Sunday morning, and your assistant got to my house at a quarter past nine.

Mr. Lewis—I beg to state that when I said I could not attend any more, that was because Mr. Carpenter had received the books from me. I called on the Monday as a matter of friendship, and then found to my surprise that Mr. Carpenter had not called. When Mr. Carpenter took the contract there seemed to be some misunderstanding at the Board upon the matter, and Mr. Butler and myself undertook to attend the poor a few days till it was settled.

The Coroner observed that they were not come to that matter yet.

Wm. Sach, the father, examined—On the Saturday evening Mr. Horner said he could not give me an order to Mr. Lewis, but I might go and see if he would give me anything, as he had been attending it. I went, and Mr. Lewis said he could not give me anything. I came back, and Mr. Horner gave me an order to go to Chelmsford, to Mr. Carpenter. I went on the Sunday morning, and gave him the order; he asked how the child was; I told that it had the hooping-cough very bad at first; I described as well as I could what was the matter with it, and he gave me some medicine for it. He gave the same medicine for her and another child, although the boy was not so bad as the girl; the medicine was all in the same bottle. Before I got home Mr. Carpenter's assistant had been to see the child. I met him; he told me the child was very bad, but he thought it would get over it. I asked if there was any alteration in the medicine, and he said no. I saw him at the house again on the Tuesday; he did not leave any more medicine then.

By the Jury—There was only one bottle of medicine furnished by Mr. Carpenter for the two children.

Mr. Lewis—I told you I had not seen the child for some days, that I could not prescribe without *seeing* it, and that if Mr. Horner would give an order I would go and see it, but if not you must go to Chelmsford.

Witness—Yes, you did.

Mr. Horner corroborated Sach's statement.

Mr. Lewis—The child that is dead had inflammation of the lungs, and the other had the hooping-cough. When the woman brought the child to me, it had inflammation of the lungs, but it was going on well when I last saw it. Mr. Carpenter has the books.

Mr. Carpenter produced the book, and said he had twelve parishes in the Union to attend.

Mr. Lewis—Mr. Carpenter pledged himself to me that he would see the child on the Sunday.

The Coroner said he supposed there was no question as to the cause of death, but the question was, had it been properly attended. They must therefore see when it was first attended. Is the assistant here?

Mr. Carpenter said he was not; he did know his assistant would be required.

Mr. W. Butler (surgeon of Ingatestone)—I perfectly well remember that Mr. Carpenter promised Mr. Lewis to see the child.

Mr. Lewis—My friends may think I neglected the child. You promised to see the child on the Sunday.

Mr. Horner—If Mr. Lewis told Mr. Carpenter he ought to see the child on the Sunday, he ought to have done it.

A Juryman—Before he sent the medicine, I think.

Mr. R. Lewis examined—My contract ceased on the 25th March, and I delivered up the book to Mr. Carpenter on the 31st. I saw the child once after I delivered the book. I called in as I was going by. I had seen the child three times previous to that, I think, and once at my own house. The child had inflammation of the lungs. I treated it for that, and the child was relieved.

A Juryman—You did not suppose the inflammation would subside of itself; it required attendance still?

Witness—It did. When I delivered up the books to Mr. Carpenter on the 31st, I pointed out to him every case, and told him this child had inflammation of the lungs, and I had not seen it from the date in the book; I said that it ought to be seen that day. He then said "If I do not see her today, I'll see her on Sunday, certainly." Sunday was the next day. That will account for my not telling Sach where Mr. Carpenter lived when he applied to me.

The Coroner—If this inflammation had not subsided when you saw it, was there any chance of its subsiding by itself?

Mr. Lewis—It was my firm opinion that if it had attendance it would have done well. Although the inflammation was not subdued, the child was doing well, and could take sustenance.

A Juryman—You had not so many parishes to attend as Mr. Carpenter?

Mr. Lewis—*I had only two; I would not undertake so many for the world. I had five before to attend, and I found I could not do it.*

Mr. Carpenter said there had not been the slightest neglect on his part, or on that of his assistant. He received the book from Mr. Lewis, without any name of the disease entered in it; he received the names of the different patients, and Mr. Lewis explained where they lived, and he told him that such a one and such a one was to be seen. There were two patients on the list of the name of Sach, one of whom he visited, but the woman told him she had got well, and two or three others whom he visited said they did not want him. He mentioned this to the

guardians, and they told him that he would probably be sent for all over the country, and that if people required medical attendance, they had relations or some other persons who would pretty soon find out the medical man for them. On the day he received an order for Sach's child, he said to Sach, "It is not my wish you should have to come twice; you say the child has the hooping-cough; this is the medicine that will do her good." Within an hour the assistant was at Sach's house. He went again on the Tuesday. On Thursday he went again, and came back and said the child was dead. In conversation on Friday, the woman said she thought the other child was better, and when the bottle was empty she would send it back, but she said nothing about this child being neglected. The death was reported to the guardians on Thursday, and nothing was said about it.

Mr. Lewis—In answer to what Mr. Carpenter has said, here is the book, in which is reported the name of the disease.

Mr. C. Butler, jun. (to Mr. Carpenter)—Did you not say to Mr. Lewis, without any reservation, that you would see it.

Mr. W. Butler—I will swear you did.

Mr. Carpenter—Let me have fair play. I have no wish to say that you have done anything wrong. I should like to know who ordered this inquest to be held?

Mr. C. Butler—Do you mean to insinuate that it was the medical men?—*Mr. Carpenter* said he did not.

Mr. Horner—I am the person. The clergyman said he would not bury the child till there had been an inquiry into the case.

The Coroner then summed up the case. They had heard Mr. Carpenter's statement, and the Jury might consider it. It was the duty of coroners and juries to watch over the lives of the poor. It was the duty of Mr. Horner to have an inquiry. The Jury had heard that Mr. Lewis's contract ended on the 25th March, and he was not therefore bound to attend the child after that time. Then he had a conversation with Mr. Carpenter, who agreed to see the child on the following day; it got worse, and an order being sent to Mr. Carpenter, his assistant went to it. The only question was, whether Mr. Carpenter ought not to have seen the child, in pursuance of the promise given to Mr. Lewis, instead of delaying the matter till he received an order from Mr. Horner. There seemed to be some little neglect in the case, not wilfully, but from Mr. Carpenter having more parishes than he could attend to. *The Board of Guardians might make such a contract if they thought proper*, but it was for the consideration of *the medical man*, whether he should *take a contract which was not likely to be for the benefit of the poor, or a credit to himself.*

The Jury remained in consultation about an hour, and then return a verdict of "Natural death," but added—"The Jury cannot help expressing their regret that the Board of Guardians, at Chelmsford, should have thought fit *to appoint but one medical man to so large a district of country as Mr. Carpenter has contracted to attend*, considering that the case before the Jury shows, that in *the multitude of business devolving upon him*, some cases will occur of *painful neglect*; the Jury think Mr. Carpenter much to blame, for not promptly having attended the deceased on Mr. Lewis's representation; but that *the death of the deceased was not accelerated by neglect.*"

*** With the above report, which is condensed from a country newspaper, we received the following remarks:—

"The death of the child appears to have arisen from the change in the medical officer, and is one of the monstrous results of a very iniquitous and disgraceful system.

"The Board of Guardians here, at the instigation of the Assistant Poor-Law Commissioners, and urged on by clerical *ex officios*, persuaded the medical gentlemen to accept of several districts at the commencement of the year, upon the plan of receiving payment at so much per head, according to the number in each parish, accompanying the contract with a recommendation to establish independent clubs. This was no sooner acceded to than a few days produced a scale of terms, actually dictating to them what they were to receive from the independent labourers. Four gentlemen, who indignantly refused to comply, were immediately deprived of their districts, and Mr. King and Mr. Carpenter now discharge the the duties formerly performed by six medical gentlemen. The latter gentleman's district extends to a distance of at least twelve miles.

UNIVERSITY COLLEGE HOSPITAL

FRACTURE OF THE RADIUS AND ULNA, WITH COMPOUND DISLOCATION.—MORTIFICATION.—AMPUTATION AT THE SHOULDER-JOINT.

S. W., aged 16, was admitted March 12, under the care of Mr. LISTON. She is a servant girl, of sanguine temperament and good consitution. On Friday, March 9, she was cleaning the outside of a parlour window, and stood on the sill. The window-sash, upon which she was depending for support, being suddenly drawn down by a person inside, she was precipitated into an area, a distance of fifteen feet. She was immediately picked up, and conveyed to the hospital. The house-surgeon detected a compound fracture of the ulna, and a fracture of the radius, both fractures being a little above the wrist-joint on the right arm. The fracture was adjusted, and the wound, which was inferiorly to, and behind, the wrist, dressed in the usual manner. A

dose of house-medicine was administered; suitable directions were given in case of the occurrence of pain or swelling; she was sent home, and desired to remain quiet. The following morning (Saturday) she was visited by the house-surgeon, who found her comfortable, but she had passed a sleepless night. On Sunday morning the affected part became so intolerably painful that she tore off the splints and bandages, which one of the dressers of the hospital had a short time before re-adjusted; in the evening she was in great pain, and the arm was much swollen.

12. To-day (Monday) she was admitted into the hospital; water-dressing was applied to the wound. The bandages were re-applied, and an anodyne administered in the evening, with the effect of producing some rest.

13. The pain and swelling were so great during the night that the house-surgeon was called up to see her, and ordered the application of fomentations; this morning she is much more comfortable.

14. On removing the whole of the apparatus this morning early, mortification was found to have taken place in the limb; at the time of Mr. Liston's visit in the middle of the day, the limb was very swollen, the fingers were of a black colour, the forearm livid, there were vesications near the elbow with fœtid discharge. There was a good deal of fever with slight delirium; pulse irregular, quick. Mr. Liston considered the only chance the patient had was the immediate amputation of the limb at the shoulder. The patient's consent having been readily obtained, Mr. Liston proceeded at once to the

Operation.—He first introduced a long double-pointed knife under the acromion, and brought the point out at the lower and posterior border of the axilla, by this means the joint was laid open; the flap thus formed of a portion of the deltoid, was raised, and the head of the bone separated from its attachments. The other flap was formed from the integuments and muscles in front. The axillary, and one other vessel, required ligature. The edges of the wound were drawn together by three points of suture, and water-dressing applied. One grain of muriate of morphia was given. In the evening, several strips of isinglass plaster were applied, and the edges approximated. The delirium ceased after a short but refreshing sleep.

15. Passed a good night; has had little pain; feels very comfortable this morning; she is cheerful, and has little fever; pulse 86, regular. The wound looks healthy.

April 2. Since the above date, the patient has been gradually improving in her health and strength, and she is now able to walk about the ward.

In a clinical lecture on this case, Mr. Liston made some general observations on mortification. "Parts sometimes perished very slowly, and if the patient had sufficient stamina the dead part separated from the living by a process which Nature set up. This form of gangrene, which had been called constitutional, generally attacked the lower extremities, in which the circulation was not so vigorous as in parts nearer the centre. It arose, in many instances, from very slight injury to the foot or toes; such, for instance, as paring a corn. So slowly did the diseased action spread that in some cases it was months before the entire limb was affected. The line of separation might take place on the dorsum of the foot, at the ankle, knee, or higher up. This kind of mortification was generally the result of some interference with the natural vigour of the circulation, arising from disease going on in the coats of the arteries, and obstruction in the veins of the affected part. It was sometimes produced by a state of the atmosphere, from bad food or other depressing causes, and was found to affect several individuals in one family, and prevailed in the same district. A remarkable case is related in which both legs mortified, and the line of separation took place at the acetabulum. The other kind of mortification was an acute affection, and generally resulted from an injury to the part which lost its vitality from obstruction to the circulation through it; the blood being impeded either in its flow to, or reflow from the part. Thus we had a good example in paraphymosis, of the obstruction, as also in cases of a part perishing from the application of a ligature. Among other causes of this kind of mortification, sudden change of temperature after exposure to cold was mentioned, but the mortification produced in this manner was more allied to the chronic than the acute kind. The mortification occasioned by injury to the part proceeded with amazing rapidity, and might set in immediately reaction took place in cases where the limb was much crushed, the circulation being choked by the excessive extravasation of blood in the intermuscular tissue. In other cases where the injury was not so severe, inflammation preceded the death of the injured part, the part becoming swollen, cold, and livid; as the mortification proceeds the swelling is increased by the extrication of air and serosity into the cellular tissue; the former of which causes the part to crepitate upon being handled; the livid appearance changes to a greenish hue, and afterwards to a dark bluish colour. In these cases the mortification might spread from the toe to the knee in twelve hours; this rapid extension was owing chiefly to the rapid effusion of the putrid serosity into the cellular tissue. In the limb of the patient whose case was before them, the pupils would observe the livid appearance of the hand and fingers,

the skin, cutaneous tissue, and muscles were dead, to the middle of the forearm, and the discolouration indicating impending gangrene, had spread nearly to the shoulder-joint. The cause of this fearful and rapid extent of mischief arising from apparently so slight an injury, could not at first be traced. The patient was young and healthy. It was found, however, on examination, that the injury was more serious than at first imagined, for the radius and ulna were not only fractured, but there was an opening into the articulation, the end of the ulna protruded, and the styloid process was broken off, forming a case of fracture with a compound dislocation. There had been nothing in the mode of treatment to account for the mischief,—the bandages were properly applied, and no undue pressure was employed. The occurrence of the mortification was not to have been expected, particularly in the upper extremity, and at that early period of life, and was one of those untoward events which occasionally occurred in the chapter of accidents.

Treatment.—In constitutional mortification, and in that arising from cold, the surgeon must not interfere with the limb until a line of demarcation between the living and dead parts is completely formed. This plan had been acted upon for a long period, though Hildanus amputated in the living parts before the line of separation had been formed. He (Mr. L.) had even seen cases in which the limb had been amputated before the line of demarcation had taken place, and they went to prove that it was a dangerous practice, because we had no means of knowing where the separation of the living and dead parts would commence. The best practice, then, was to wait till the line of separation had taken place before interfering, and then it was not advisable to amputate in the sound parts. You might, however, do so in young persons in whom the disease resulted from cold, provided you could form a better covering for the bones, by such a proceeding; in the mortification which occurred in old people you must cut *below* the line of separation. This cannot be done in the acute kind of mortification, where the plan to be pursued must be at once carried into effect, and the limb be amputated as far as possible from the discoloured parts. In the case above related it would not have done to have removed the limb, even at the elbow; the upper arm had become somewhat involved, and it was even with difficulty that by amputation at the shoulder-joint the whole affected parts could be got rid of, yet with this the prognosis was not favourable. The profession were much indebted to Baron Larrey for having pointed out, not the difference between traumatic and constitutional gangrene, but the appropriate practice in each. Very few patients are saved in cases of this description; the case, however, is a desperate one, and demands a desperate remedy. The patient whom he (Mr. L.) had operated on, was going on well; one of the flaps had become discoloured; mortification had, however stopped, and the sloughs had separated.

Regarding the operation he had little to say. He hoped, however, to demonstrate the operation to the students before the close of the session. The operation could not always be performed in the same manner, the surgeon must act according to circumstances and procure his flap in the best manner the nature of the injury or disease would allow him. The best operation, he thought, where it could be performed, was the one which he had employed in the present case, the posterior flap being first made. In this instance he had not been able to cut so low as he should have wished to have done, in consequence of the discolouration having spread very high up in the posterior aspect of the shoulder-joint.

AMAUROSIS.—ABSORPTION OF BONE.

Mr. L. now exhibited the brain of a man who had become totally blind from amaurosis. The patient had been an intemperate liver, and much exposed to cold weather in his occupation of driving a waggon with fish to town during the night. He first became affected with a severe pain in his forehead, and lost the sight of one eye. Continuance in his old habits soon brought the other eye into the same state. He continued to suffer from violent pain and tension over the forehead, for which he was bled and blistered with advantage. He was subject to fits, and eventually perished from fever. On examining the brain the cause of the amaurosis was at once apparent; the anterior lobes of the cerebrum were coated over with lymph, which glued the dura mater to the brain, enveloping and compressing the optic nerves. In this case, at one period of treatment, five or six weeks before the patient's death, it was thought advisable to form a seton in the neck. Mr. Liston introduced a small piece of the tibia for the purpose. The bone being carefully weighed both after and before the experiment, it was found not to have been acted on by the absorbents.

LOCK HOSPITAL.

GONORRHŒA WITH TESTITIS.

Charles Greig, ætat. 23, was admitted under the care of Mr. Walker, March 27th. His present complaints began about eight months since, from an excoriated surface around the glans penis and inner edge of the prepuce, ten days after connection; these sores healed in two months' time. The gonorrhœal discharge began four months since

with swelling, about three weeks after connection, and in four days afterwards a discharge came on. He had hernia humoralis of the left testis about one month since, which soon healed, and he has at present the same affection on the right side.

The treatment he has undergone has consisted in rubbing in mercurial ointment for the space of six months, by which his gums were made slightly tender. Five weeks since he took two blue pills daily, for three days, which affected his mouth pretty smartly. He lives temperately, and has had no connection for five months. The symptoms at present are,—enlargement of the right testis, with induration, and pain on pressure. The epididymis testis of the opposite side is in similar state. A yellow discharge from urethra, scalding in micturition, nocturnal chordæ; general health bad; great nervous irritability; severe indescribable pain at the back of the neck; bowels confined; limbs and loins very weak.

March 29. A blister to the lumbar region. Four grains of Dover's powder every six hours; a strong senna draught twice every week.

April 5. Oxymuriate of mercury, one-third of a grain, three times a day; decoction of sarsaparilla, half a pint daily.

7. Veins of scrotum very much swollen and enlarged; they were punctured and poulticed. A senna draught ordered to be taken immediately, and a saline draught every six hours.

10. The testis was immediately relieved from the veins being punctured; but they have since got worse, and they are now more tender and red than before.

12. Twelve leeches were ordered to the testis, a linseed-meal poultice to follow, and the decoction of sarsaparilla to be persevered in.

24. The leeches afforded much relief, and the testis has been improving ever since. He complains of slight pain in the chest; the gonorrhœal discharge, scalding, and chordæ are all worse. Mr. Walker ordered the inferior portion of the glans penis to be touched with caustic to relieve these latter symptoms. Th oxymuriate of mercury has been discontinued for the last three days.

30. The lunar caustic produced a great deal of excoriation, and brought on some slight phymosis, which has not yet subsided. It has entirely removed the chordæ, and the scalding in micturition is much lessened. There is now no pain whatever in the testis on pressure, but much induration of the epididymis, and soreness and pain of the vas deferens.

May 3. The following ointment was ordered to be rubbed on the testis:

Strong mercurial ointment, two ounces;
Hydriodate of potash, two drachms. To be used every night and morning.

7. He can now retract the prepuce easily; some slight scalding remains; the epididymis and vas deferens remain in statu quo; there is some pustulous eruption from the ointment; the gonorrhœal discharge continues, and an injection of cubebs has been ordered to check it.

15. The scalding is diminished; the discharge is less; no pain in the chord. To persevere with all the medicines; he has resumed taking the oxymuriate of mercury pills since the 3rd.

21. There is still some slight scalding, and a thick yellow discharge remains, for which muriate of ammonia, 3ij. to water 0j., was ordered to be used three times daily.

24. He still complained very severely of pain in the loins, for which he was ordered a blister.

29. He has still some severe pain at the back of the neck, with severe throbbing over the occiput; the pains in the loins better; he has no pain in the groins; gonorrhœal symptoms as before.

June 10. Ordered—

Tincture of henbane, half a drachm;
Infusion of buchu leaves, two ounces, three times daily.

19. He has not had any discharge since the last report; in every other respect well. Made an out-patient.

OLD SORES.—SUPPURATING BUBOES.—RUPIA. GONORRHŒA.

Samuel Dixon, ætat. 23, admitted July 31st, under Mr. Walker. He was by "profession" a sailor, and his previous history of the disease he has gone through, affords many points of interest.—He states that about four years since he contracted a gonorrhœa, which kept him company for three months, for which he took various doses of sulphate of magnesia, and used many injections, which gave him great pain. Nine months since he had four sores occupying the angle between the frænum and prepuce, which remained open for one month, and were eventually healed by the lead lotion. Four months ago these same sores broke out afresh, after a fresh connection, and have been only healed for the last three weeks. He has at present a rather large bubo, which has made its appearance since the last healing of these sores. The application of lead lotion, and the taking of Epsom salts, have been the only means of cure he has resorted to. He has never taken any mercury. There are at present some small white cicatrices of the former sores which are thickened and indurated. In the left groin there is a suppurating bubo with much surrounding inflammation, and a smaller one in the right groin, and in the right axilla; the tonsils are very vascular; the general health very good; the bowels confined.

On his admission he was freely purged with blue pill and black draught, as, in ad-

dition to the confined state of the bowels, it was discovered that he had drunk large quantities of wine, at various recent periods; the bubo was ordered to be poulticed, and one ounce and a half of the white mixture was ordered to be taken twice daily.

August 4. The bubo was opened by Mr. Walker, by a small central vertical incision, there was, however, but little discharge from it.

6. There is some inclination to blueness of the skin; he complains of great debility; the tongue is pale; the pulse weak and languid; the buboes in the groin and axilla are both very painful, the latter was ordered to be poulticed, the former to be leeched. The white mixture was ordered to be continued, and, in addition, he was ordered one ounce of decoction of cinchona, three times a day.

Sept. 4. Going on very well. The local and general disturbance of the constitution are subsiding.

8. Ran away.

About a twelvemonth after this period he again presented himself for admission. He then laboured under extreme cachexia with rupia, and very painful and ulcerated sore throat. There were ulcerated buboes, accompanied with phymosis, and some ulceration of the inferior margin of the prepuce. The history which he gave of all these symptoms was, that he continued for eight or nine months after running away from the hospital, perfectly free from all his old complaints, at the end of which time he caught a fresh clap from recent foul connection, which continued about six weeks, and was cured by copaiba, which reduced him very much in health and strength. Soon after this, spots of ulcerated rupia made their appearance over several parts of his body; fresh buboes formed and burst in the groin, and his throat at the same time began to ulcerate. He stated that he felt himself much worse ever since he took the copaiba, and declares that, besides it, he never took any other internal medicine whatever. After leaving the hospital he made two voyages to Spain, and lived very regularly. The treatment he was put under consisted of ten grains of blue pill twice daily, from which he derived great benefit; the rupia sores healed, the ulcerated sore throat improved, the buboes filled up, and he rapidly regained his health and strength; thus forming altogether a well-marked case of rupial eruption occurring in a constitution untainted by mercury, and cured by it.

MR. OWEN'S VIEWS OF EMBRYOLOGY.

We have been requested by Mr. John Miller to give insertion to the following quotation from a paper published by Mr. Owen, in the "Philosophical Transactions," for 1834:—

"When the whole of the vascular membrane was spread out, its figure appeared to have been that of a cone, of which the apex was the umbilical chord. The umbilical chord measured two lines in length, and one in diameter. It was found to contain three vessels with a small loop of intestine, and from the extremity of the latter, a filamentary process was continued to the vascular membrane. On tracing the contents of the chord into the abdomen, the two large vessels, with coagulated blood, were found to unite. The common trunk then passed backwards beneath the duodenum, and after being joined by the mesenteric vein, went to the under surface of the liver, where it penetrated that viscus. This was consequently an omphalo-mesenteric or vitelline vein. The third vessel passed between the convolutions of the small intestine, along the mesentery to the abdominal aorta, corresponding to an omphalo-mesenteric or vitelline artery. The membrane, therefore, upon which they ramified, answered to the vascular layer of the germinal membrane, which spreads over the yolk in the oviviparous animals, or to the umbilical vessel of the embryo of the ordinary mammalia. The filamentary pedicle which connected this membrane to the intestine was given off near the end of the ileum."

Mr. Miller also requests us to state that he is preparing for publication a review of Mr. Owen's views concerning the relative development of the placenta and brain.

The plate annexed to Mr. Miller's paper lately published, which represents the human ovum (page 60) should have borne the title, "Human ovum at the tenth week," and not "at first week."

DIETARIES OF THE POOR.

A Correspondent, who has addressed us on the subject of the New Poor-Law, wishes us to publish the following suggestion, the subject of which occurred to him in consequence of the recent observations in the House of Lords on dietaries:—

"Let the opinions of the profession, individually and collectively, be given *con amore* and *con spirito* on these *dietaries*, both in the metropolis and the country. A collective

opinion, numerously signed, will, perhaps, be the most effective. There will be no trouble in ascertaining the dietaries, they are sufficiently public. Allow me to mention the proscription of that harmless article (in moderation) *beer*, which, to those who have been used to it, cuts at the root of comfort; and, also, as you, Sir, and your brethren know better than myself, must often tend to produce prostration of strength and lowness of spirits. Oh, that I could keep some of the New Poor-Law advocates for a time on their own diet! There could be no better punishment, or more amending to the heart and feelings.

"By general condemnation of the 'dietaries,' including the influence of the highest names in the profession, medical men may do much in the severe and pitiable cases for the poor, indicating at the same time what their diet ought to be. Let me respectfully say to them, 'Humanity asks it of you, and she promises you a rich reward in the blessings of millions, and honour to endure long beyond your mortal career!' Ministers and devoted Poor-Law supporters still retain some dread of public opinion."—M. A.

EXAMINATIONS AT UNIVERSITY COLLEGE.

THE following are the questions proposed by Dr. ELLIOTSON, on Tuesday, to the candidates for honours in his class. Our readers are aware that the candidates, after assembling and receiving the questions, are shut up alone to write their answers, without any communication with each other, or access to books. They were thus occupied from 10 in the morning till 8 at night:—

1. What states of the system at large, and of individual parts, are indicated, and how indicated, in the face?

2. What are the varieties of the pulse, the indications of these varieties as to the system at large and individual parts, and the cautions requisite in drawing inferences from the pulse?

3. What are the symptoms, anatomical appearances, and treatment of continued fever?

4. What are the symptoms, the diagnosis, and the process of suppuration.

5. What are the symptoms and treatment of erysipelas?

6. What are the symptoms, diagnosis, and treatment of purpura?

7. What is the diagnosis of apoplexy? and what the morbid conditions found after death?

8. What are the phrenological facts of mental imbecility and insanity?

9. What are the symptoms, anatomical appearances, and treatment of chronic pleurisy?

10. What are the symptoms, anatomical appearances, and remedies, with the rules for their administration in pulmonary hæmorrhage and ecchymosis, absurdly called pulmonary apoplexy?

11. What are the symptoms, the anatomical appearances, and the best treatment of Asiatic Acholia, absurdly called Asiatic cholera?

12. What is the treatment of intestinal obstruction?

TO CORRESPONDENTS.

Mr. Barnes should submit the facts of the cases which he has mentioned to the magistrates in Quarter Sessions. If a coroner act in the manner which has been described by Mr. Barnes, he ought not to be allowed one farthing for attending the specified inquests. At the same time we must remark, that Mr. Barnes had no legal claim to a fee, as the summons was not signed by the coroner, but by the constable. If Mr. Barnes will refer to page 716, of the second volume of THE LANCET, for the years 1835-6, he will there find a copy of the Medical Witnesses' Act, in which the power of the coroner, with regard to summoning medical witnesses, and the form in which they should be summoned, are clearly and distinctly stated. When the medical witness has been summoned by the coroner, the witness is subjected to a fine of five pounds for non-attendance, but if the witness *do* attend, in pursuance of such order, although he be not examined, the coroner, on refusing to pay the witness, may himself be taken before a magistrate, and held to bail, to answer to an indictment for having wilfully disobeyed the provisions of an Act of Parliament.

The subject mentioned by *A Subscriber* shall be fully investigated, and if any information be derived from inquiry, which may prove to be worthy of general notice, an account of it shall be inserted in our columns. Probably the subject will furnish matter for a short series of leading articles.

We have received the letter of *W. M.*, relative to the case of the individuals implicated in a recent transaction connected with the College of Surgeons. We were already well acquainted with the facts; but as the trial will probably take place in the course of next month, we shall abstain from making any comments on the affair. The parties are, we understand, in France.